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Rifles and Moose

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With the Ammunition Board

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Marksman Spare that Tree

By F. C. Ness

Strength of the Springfield Bolt

By E. C. Crossman

Hunting Sitatunga

By Mrs. Florence H. Morden

Rifle Shooting in High Schools and Colleges

By W. R. Stokes

20 cents
the copy

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the year



Ralph H. McGarity
District of Columbia

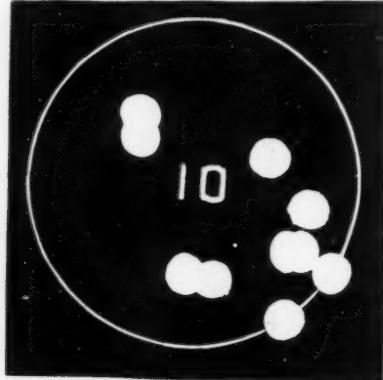
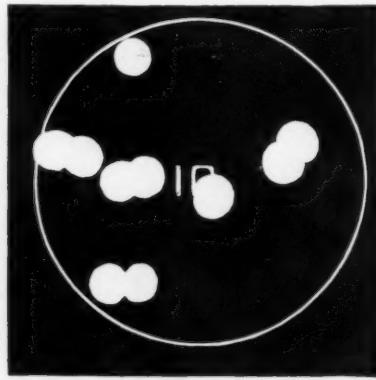
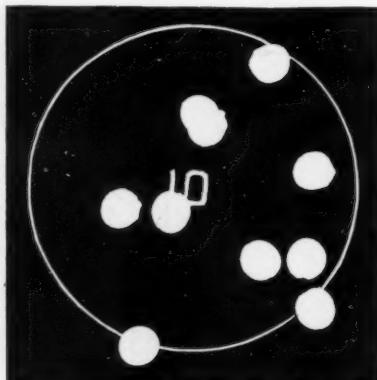
The Small Bore Star of Perry- or The Story of a Great Achievement

GOING at this business of shooting with that quiet, almost grim, determination born of faith in his ability, his rifle and ammunition, and with the conviction "to the victor belongs the spoils" perhaps no other Small-Bore shooter at Camp Perry this year gave such a splendid exhibition of marksmanship than this star from the nation's capital. Endowed with that rare quality of perfect control and possessed of shooting knowledge to co-ordinate the essential elements into a winning combination, he emerged from the Camp Perry Small-Bore Matches of 1923 with a record which has no parallel in the annals of Small-Bore Shooting.

His first claim to distinction came with the splendid performance of three consecutive possibles in the Any Sight Match at 100 yards—something that has never been done before anywhere. He also won the aggregate for this match. Again in the 50-yard Any Sight Match he scored three clean possibles, also winning the aggregate for the Match.

To win the N. R. A. National Individual Championship is in itself no small thing, but to do this with a score of 248 out of 250 makes one

AN UNPARALLELED RECORD



THREE CONSECUTIVE POSSIBLES AT 100 YARDS—BY R. H. McGARITY, AT CAMP PERRY, USING REMINGTON PALMA 22 LONG RIFLE CARTRIDGES

naturally pause and wonder what kind of a human machine-rest the balance of the field were up against. This match consists of 10 shots at 50, 100 and 200 yards. The individual scores were 100—98—50 in the order named.

Giving consideration to his past record and present excellent shooting, he was selected as a member of the East Team to shoot against the West over the Palma Course. What did he do? Well, he just naturally shot true to form with a score of 222 out of 225, which was high for both teams.

Then they put him on the District of Columbia Team in the Caswell Trophy Team Match. Being of a naturally obliging nature, McGarity did not disappoint his team captain and so presented a score of 394 out of 400, this being high score for the team.

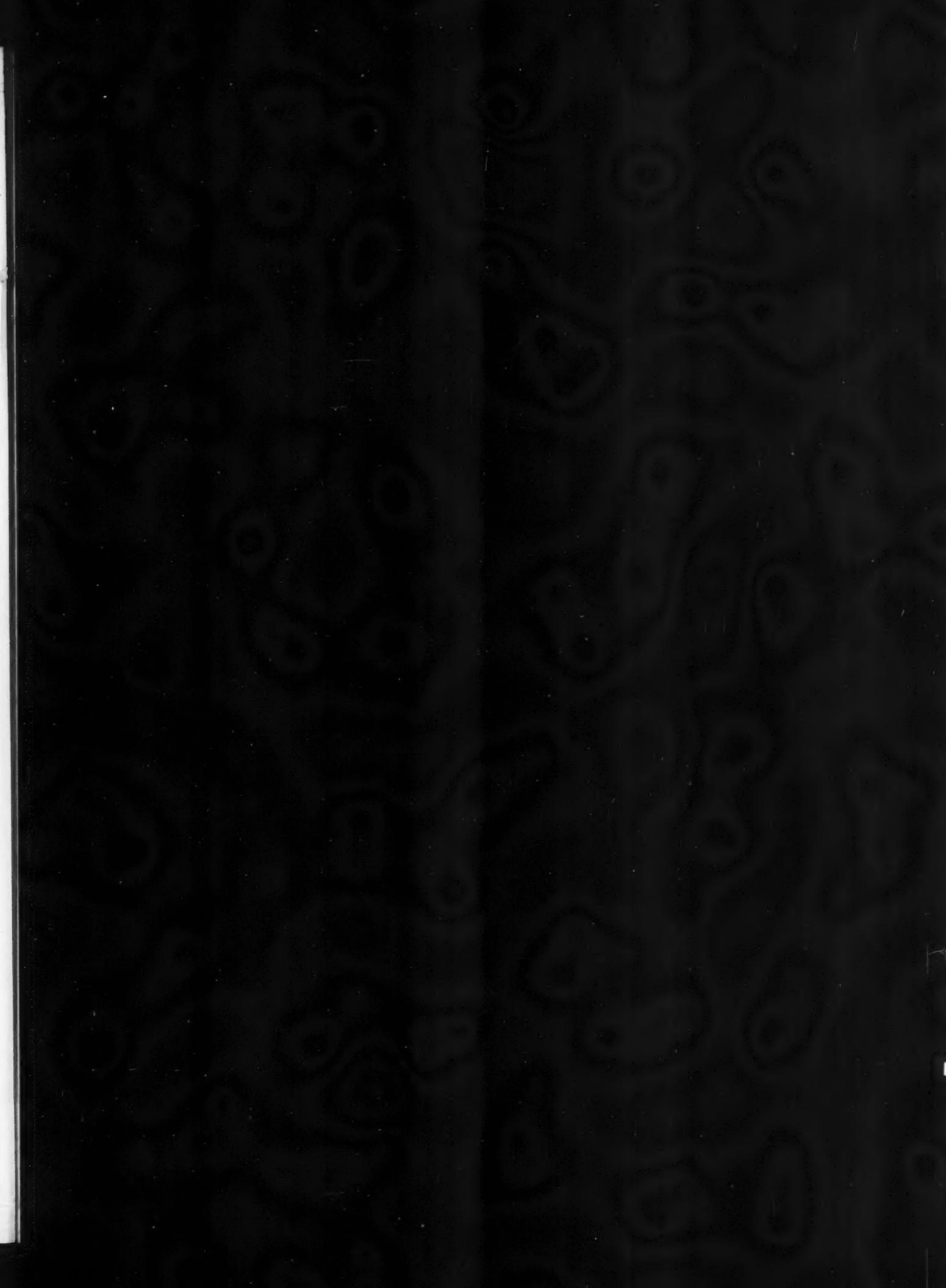
His next effort was in the Dewar Team Match, the annual Small-Bore Team Classic with Great Britain. He finished in fifth place on the team of 20 with 392 out of 400, consistent to the last.

There you have the story of a truly great achievement, excepting, of course, that the story would not be complete unless we stated that in all of his shooting Mr. McGarity uses Remington Palma Cartridges.

PALMA—

THE PREMIER CARTRIDGE







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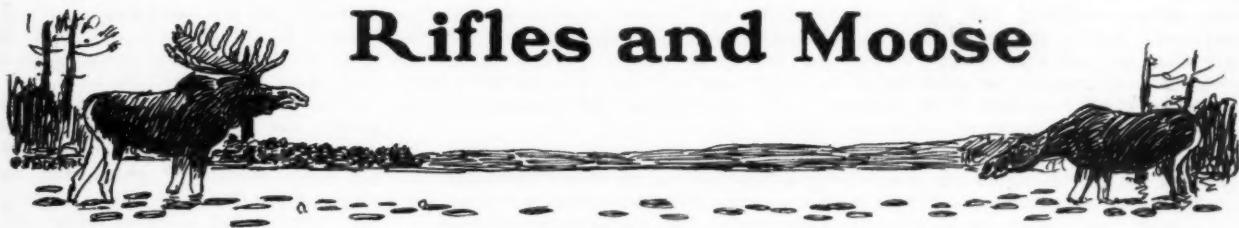
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Rifles and Moose

MY FRIENDS all call me a gun crank and say that my one pleasure in life is hunting. I know that I love all kinds of rifles, shotguns and revolvers and I have owned and shot almost every good make of gun, from .22 to .50-110 and .44 to 10 gauge.

What I like in big game stories is the actual results of various calibers on game with exact descriptions of rifles and wounds. In this article I will try and tell my fellow-sportsmen the results we obtained with modern rifles on moose and deer.

Our party of five spent two weeks this last September in the Hudson Bay district and Quebec. Two of the party were greenhorns and three were experienced hunters, and good shots. We were in the woods for the ideal calling season when the moon was full and the nights clear and quiet. I will never go after moose again in the calling season, for I much prefer still hunting to what to a real sportsman is really murder.

We went into the bush at Kipawa Junction, Quebec. Some of the party stayed in the Osteboning Lake country while Leo and I went north to the Hudson Bay district. Our rifles were as follows:

Dave, our sixty-seven-year-old hunting partner, used a 33 W. C. F. Model 1886, with ivory front and rocky mountain rear sight, shooting the new high velocity Winchester cartridge.

Ray used a 30 Newton with open sights, shooting the 3,000 feet per second 180-grain Western Lubaloy bullet.

Jack used my favorite, a .50-110 Model 1886 Winchester with twenty-six inch barrel, Sheard gold bead front sight and Lyman wind gauge receiver rear sight, using the 300-grain high velocity cartridge.

Leo, whom I believe is one of the best game shots in America, used the .30-06 Model 1895 Winchester with Sheard gold head front sight and Rocky Mountain rear sight.

By R. Bentley Jr.

I want to say here that in spite of what I have read to the contrary, I absolutely know that you can see open sights after it is too dark to catch peep sights. I greatly prefer peep sights myself and I use a Lyman 48 rear sight on my beautifully balanced sporting Springfield, but I could see Leo's open sights after I could not catch my peep and the others all found this to be true.

33 WINCHESTER. First, I will give you the story of Dave's 33 Winchester. About six-thirty in the evening, the head guide called a small bull into the water about twenty-five yards from the canoe. It was the old man's first glimpse of a moose and he insisted on shooting it. He could still catch his sights and he put a 200-grain bullet through its left shoulder, dropping the animal dead in its tracks. It weighed about seven hundred pounds and had a poor thirty-six inch head. The bullet smashed the left shoulder and came out, tearing a two-inch hole behind the animal's right shoulder.

I believe the new 33 Winchester is the ideal rifle for an elderly man or a woman, because of its lack of recoil and light weight. It is an excellent big game cartridge up to two hundred yards. It will usually go clear through an animal, causing it to bleed so that it can be easily trailed, if not killed outright.

.50-110 WINCHESTER. Next comes the game getter, the old reliable .50-110 Winchester high velocity. One moose and two deer fell to this rifle. Jack was on a bay off Osteboning Lake about 6.30 a. m. when the guide called a big bull out on the shore about one hundred yards from the canoe. It was still too dark to catch his peep sight clearly but he made a lucky shot, striking the moose in the chest. The big 300-grain bullet smashed several ribs and came out through the left hip, smashing it to bits and dropping the moose dead in its tracks. This is the fifth consecutive moose killed in its tracks with one shot with this rifle and one of them was dropped at three hundred and

twenty yards measured distance. One of the deer was paunched at sixty yards. He ran about two hundred yards and was dead when Jack found him. All hunters know a paunched deer will usually run a long way, but the old .50 did the work. This deer dressed 254 pounds. The second deer was standing on the far side of a small lake about two hundred and thirty yards from the hunter. The bullet smashed both front shoulders and went clear through. The moose and both deer bled profusely externally.

30 NEWTON. Ray is a greenhorn, but he got his moose, a huge twelve hundred pound animal with a small spread, but heavy and massive antlers weighing with the head cleaned ninety pounds. The spread was forty-three inches. He had a remarkable adventure with this old moose. The guide called the moose to within forty feet of the canoe on the shore of Cook's Bay at 8.45 p. m. on a moonlit night.

Ray could not see his sights and shot by putting his barrel on the moose and holding low. He fired four shots. Two were clean misses and two struck directly in the center of the brute's chest as he was facing them. The moose never even staggered but charged into the lake and started to swim. The guide backed the canoe while Ray reloaded. They paddled up to the animal about one hundred yards from shore and Ray broke his neck at ten feet. That old monarch sank in twenty feet of water and it took six men all the next morning to raise him and get him ashore. The first two bullets went to pieces on the animal's ribs, tearing him up badly inside, but failing to knock him over.

The 30 Newton has a terrible recoil, greater than the 405 or .50-110 and is very unpleasant to shoot. The bullet driven at three thousand feet per second goes to pieces on small bones and I would not recommend it for thick skinned, heavy boned animals. Ray killed a deer with it, the bullet smashing its shoulder to pulp and spoiling about fifteen pounds of meat. Neither moose nor deer bled externally.

.30-06 IN SPRINGFIELD AND WINCHESTER. For the benefit of "American Rifleman" readers, we used most of the modern cartridges in these two rifles and had an unusual opportunity to demonstrate their effectiveness on moose. For moose and larger bear, I believe the 220-grain bullet is best. Next, the 180-grain Western lubaloy open point bullet. Our 220's were also Western Lubaloys but with the soft point bullet. Both Leo and I have used the .30-06 on deer for years with wonderful success but this was our first trial with them on moose. Previously he used a 401 Winchester auto for moose with excellent results while I used my .50-110.

We were greatly disappointed with our 30's this trip, but for ordinary daylight shooting I still believe they are the best for all around big game shooting. Leo shot his moose at 70 feet about 9.00 p. m. on the brightest moonlight night I ever saw. He was quartering with his rear to the hunter and moving away. The 220-grain lubaloy struck him

just in front of his left hip, smashed several ribs and lodged behind the right front shoulder, knocking him over. He got up and a 180 Remington Bronze Point high speed bullet struck him broadside in the stomach, low down.

The moose disappeared into the bush. Leo's other three shots were misses, due to the deceptive light. He left him to stiffen up and we returned the next morning. That moose never bled a drop externally and it was only by good luck that we managed to trail him half a mile into the slash where he lay dead, but the body was still quite warm, showing he had just died. Neither bullet went through him and the 180-grain Remington went to pieces without striking a bone, but tore up his organs badly. He lay down a dozen times in the half mile but never bled a drop. The 220-grain did the greatest damage.

My first opportunity came about 8.30 p. m. on a little lake not far from Hudson Bay. It was a very unusual experience and taught us both a lesson. My Indian began calling about 6.30 p. m. and four different bulls answered and came nearer. At 8.00 p. m. there were four bull moose in that lake, but the wind was just wrong for three of them and we could not get near enough to shoot. One bull came out on the north shore and we paddled up within thirty yards with the wind in our faces.

I put the barrel on him and held low. It was mostly guess work, for the moon was almost in our eyes and he was in the dark in the tall marsh grass. I had a 220-grain in my barrel and then 180 and 220 alternating in the magazine. For close work, no sight adjustment is necessary with these two cartridges. He dropped into the water at the first shot. We paddled up to about ten feet and waited. His bulk was almost hidden by the marsh grass but we could see his head and heavy antlers thrashing around. He struggled for ten minutes to rise and all I could see was his head, so I held my fire, not wishing to spoil it. I got out of the canoe and shot him under the ear with my .22 Smith & Wesson revolver and knocked him out. He had about a 50-inch poorly matched head and was a young moose. We left him for morning and paddled off. We had not gone forty yards when we heard a splash and turning, saw that the moose was up and running along the shore. We both opened fire and fired seven shots between us, knocking him down twice. It was all guess work. He got up and we heard him crashing through the tamaracks and out on the burn. Then all was quiet. We were too surprised to talk.

The next morning we returned expecting to find a dead moose not far from the lake. We followed a small trail of widely scattered blood signs for half a mile, then they stopped and we lost his trail among a maze of runways and fresh tracks. Imagine our surprise when after a four-hours search, we failed to find that moose. The guide said he has seen similar incidents before and claims I hit a bone with the first shot and after the shock

wore off he recovered and escaped. The .22 probably glanced off the thick skull. Next time a moose is not dead I'll put a big bullet through his heart and not try a .22.

Wishing to try the new 110-grain high speed cartridge driven at 3300 feet per second, I put one in the barrel and one last in my magazine, then a 180 lubaloy and next two 220-grain cartridges. Leo put first four 180 Remingtons High Speed and then for his last shot a 180 lubaloy.

We left camp at 5.00 a. m. and began calling. About 6.30 a. m. a big Hudson Bay moose came into the lake facing us at seventy-five yards. It was foggy, but light enough to see the sights clearly. I took deliberate aim and put the two 110-grain bullets in his chest. The moose never moved and I fired again. He lowered his head as I shot and the 180-grain lubaloy caught him about eight inches above the nostrils in the center of his nose. The bullet went to pieces on his jaw bone, smashing it and coming out in about a dozen tiny holes. The two 110-grains stuck slightly, but extracted. When the 180 hit him he stumbled down on his knees, stood up broadside, whirled and climbed the bank. I fired twice, the first 220 going into his rump and coming out behind his left shoulder, turning his broadside. The fifth shot, another 220, struck his right front shoulder, smashing it but not going clear through.

The moose fell over and lay still but staggered up and stumbled off before I could reload. Leo fired his entire magazine. It was hard shooting as the moose was traveling through thick birch second growth, although very slowly. Leo's last shot, the 180 Lubaloy, hit the back bone, smashing it to pulp and killing him outright. Of course, my shots would have finished him within 200 yards, but remembering our last experience, Leo gave it to him. Two of his 180-grain Remington bullets also hit the moose in the stomach and ham, tearing the meat up badly but not knocking him over.

This is the greatest test of any animal's vitality I ever experienced or read about. It took eight assorted .30-06 bullets to stop that monarch. He had a fifty-two inch head, not a pretty head, but a very unusual one with several extremely long points, two of which measured over twenty-six inches in length. Those antlers were made for fighting and not beauty, and I am proud of my trophy. Upon skinning him we found the 110-grain bullets had gone to pieces after penetrating about eight inches and tore the flesh up badly without striking a bone. We judged the moose to be about a six-year-old, a huge animal weighing close to thirteen hundred pounds.

Taking all my moose hunting experiences into consideration, I honestly believe the big bore rifles such as the .50-110 High Velocity, the .35 and .405 Winchesters, the .401 Automatic, the .45-70 High Velocity, and the new .35 and .400 Whelans to be far superior to the .30-06, .300 and .256 for moose, especially in the calling season when most of the shooting is done in poor light and you cannot place

(Concluded on page 17)

Sitting In With The Ammunition Board

By Kendrick Scofield

DEPARTING from precedent which fixes Quantico and early spring for the place and season for ammunition testing, the Ammunition Board has decided to hold this year's tryouts at the Aberdeen, Maryland, Proving Grounds in November and December.

The tryouts at which the National Match Rifle ammunition for 1924 will be chosen will begin on November 5. Frankford Arsenal will submit last year's type and two other lots complying with last year's general specifications. The firing will be from Mann barrels in V rests at 600 and 1,000 yards, and the results determined by the mean radius system, accompanied by figures showing Group Diameter, Extreme Verticals and Extreme Horizontals—these latter being for the information of the board.

The International and Olympic ammunition tryouts will be held at the Aberdeen Proving Grounds beginning December 17. Two types of ammunition will be chosen, the first for the International Matches will be fired at 300 meters. The second, for the Olympic and Palma Teams, will be fired at 1,000 yards. The same methods of firing and the same system of target measurement prescribed for the National Match test will apply.

The 1924 National Match rifles will follow the same general specifications as those of 1923 except that the safety locks will be reversed, the cocking piece cut off and the magazine follower made to work more smoothly. Suggestions that the National Match rifles be equipped with receiver sights and pistol grip stocks, while approved in theory by the board, was rejected at this time pending the adoption by the Ordnance Department of standard types of receiver sights and stocks.

About 400 special pistols will be available for teams entering the Pistol Team Match. These will have special barrels, cut-back triggers and checkered grip spring housing.

Some of the subjects for discussion at the Ammunition Board Meeting were outlined at a previous gathering held at Camp Perry during the Matches, where a quorum of the board was present. At this meeting all team captains and ammunition representatives on the ground were invited to be present to make suggestions touching upon possible desired improvements in National Match arms and ammunition.

At this meeting it was made very apparent that the team captains had no improvements to suggest so far as ammunition was concerned, the ball cartridges furnished for the 1923 Matches having proven to be of even greater accuracy than those super-accurate loads supplied in previous years. But when the Ammunition Board let down the bars for suggestions as to small arms they started something. There was hardly a feature of

the National Match rifles from front sight to butt plate that did not come in for discussion, and while some of these suggestions often approached the bizarre and were manifestly impracticable, there emerged from the welter of discussion several points which were considered worthy of further serious thought.

Among the team captains there seemed to be a unanimity of opinion that changes could profitably be made in the form of the safety locks and cocking pieces of the service rifle; in the types of front and rear sights and in the stocks. Of these subjects the safety locks, cocking pieces, and the grip stocks, have been long discussed, and have been regarded generally among riflemen as the greatest field for improving the arm. After listening to the opinions of the riflemen, the board decided that these four subjects might well be brought up at the full meeting of the board, which was set for October 15, and be threshed out there. In addition to these specific matters relating to National Match rifles, the board had scheduled for consideration and investigation the question of lock time by the Ordnance Department looking to the speeding up of the actions of our service weapons, by which expedient it is thought that the Springfield can be made the equal, if not the superior, of continental match weapons of the Martini type. There then remained the regular business of the board, which included general specifications for rifles and pistols for the 1924 National Matches; general specifications and methods of testing and selection of ammunition for next year's National Matches, and the same subjects in connection with ammunition for the International, Palma, and Olympic Matches of 1924.

With these matters before them for consideration, the board met on October 15 at the Ordnance Department in Washington. These members were present: Brigadier General Colden L'H. Ruggles, Assistant Chief of Ordnance and Chairman of the board; Colonel C. E. Stodter, Cavalry; Colonel Fred M. Waterbury, New York National Guard; Commander Carl T. Osburn, U. S. Navy; Major Littleton W. T. Waller, Jr., U. S. Marine Corps; Major William S. Fulton, Coast Artillery Corps; Major Glenn P. Wilhelm, Ordnance Department; Major Lee O. Wright, Ordnance Department; 1st Lieut. Grosvenor L. Wotkyns, Infantry; Mr. R. V. Reynolds, and Mr. K. K. V. Casey.

In directing the deliberations of the board and presenting to them the matters for consideration, General Ruggles proved himself a past master, and it is safe to say that at no previous session of any Ammunition Board have more matters been disposed of with greater detailed consideration than during this single session, which began in early morning and lasted well into the afternoon.

In addition to the board members, there were present Colonel Otis C. Horney of Frankford Arsenal; Major Earl McFarland, Ordnance Department, of Springfield Armory; Jervis Williams and Messrs. Kahrs, Hadley and Dickerson, of the Remington Arms Company; Sherman Lloyd, of the Du Pont Company; L. C. Weldin, of the Hercules Powder Company; Major J. J. Dooley, of the United States Cartridge Company; R. F. Riggs, of the Western Cartridge Company; Captain James Hatcher, of the Ordnance Department, and J. M. Robinson, of the Winchester Repeating Arms Company.

The first business which General Ruggles called before the meeting was consideration of the recommendation to make changes in the safety locks and cocking pieces of the Springfield. Glancing about the board, Colonel Ruggles' eye lit upon a rugged countenance which has long suffered from the impact of the service rifle and forthwith called upon Major K. K. V. Casey to state the case against safety locks and cocking pieces.

"The safety lock is a man killer," declared Major Casey, feelingly. "The present safety lock works contrary to common sense and two motions are required to operate it when if it were reversed one motion would be sufficient and knowledge that the safety lock may injure them causes many riflemen to assume improper firing positions. It is also pertinent to the question that a report made during the late war mentioned the fact that 75 per cent of all Turkish prisoners taken had lacerated noses, an injury which was directly traceable to the safety lock on the cocking piece, and when a man gets a whack on the nose the fight has been taken out of him."

"There have already been made up some three hundred 'right-hand safeties,' but riflemen generally do not seem to know of their existence. The recommendation by team captains that this year all rifles be equipped with the right-hand lock should not cause any great expense. Concerning the cocking piece, that serves in no useful capacity except in assembling and disassembling the bolt and in its present shape it means that when a man attempts to get as close as he can to his rear sight, the cocking piece is going to cut his cheek in most instances. It is a simple matter to eliminate this and this elimination will not only remove chances of injury from this source, but it will lighten up the bolt mechanism and make for greater lock speed."

Colonel Stodter seconded Major Casey's statement, but added that one reason why the cocking piece and the safety lock are man killers is because of the shortness of the Springfield stock. Major Wilhelm told the board that this matter had been considered by the Infantry Board but that as yet no recommendation had been made. Major McFar-

land said that these changes were entirely practicable, after which Major Casey made the motion that on National Match rifles for 1924 the safety lock be reversed and that portion of the cocking piece which excludes from the sleeve when the bolt is down be eliminated. The motion was carried.

Types of front sight for the service rifle were then called up for discussion. The recommendations of the team captains had been that there be furnished for the 1924 matches front sights of three types: One type such as is at present furnished with the Springfield rifle. Another conforming to the dimensions of the so-called "Marine Corps Front Sight"; and a third which should be intermediate between the two.

Colonel Stodter reported that there had been quite a demand on the part of shooters for the wider front sight and that there seemed to be no known objection to its use; also that it possessed certain advantages in the matter of easier aiming. The Colonel, however, did not see any need for three types of sight.

Major Waller declared that the idea that the Marine Corps stood back of the wide sight as a target sight was erroneous. He stated that the wide blade known as "The Marine Corps Front Sight" had been developed purely and simply as a field sight and that the Marine Rifle Team has never used it for match shooting, preferring a No. 6 sight. The discussion concerning front sights resulted in a vote of the board to make no changes in respect to the front sight width, but it opened up a discussion of adjustable front sights, which became quite protracted.

Major Casey advanced the opinion that one reason why riflemen ask for so many changes on the Service rifle is that they are allowed to make no alteration in the arm. He advocated permitting the shooter to exercise some ingenuity.

"There are some men who could not get the results with a narrow blade that they can get with a wide blade," he said. "Also," he said, "it is impossible for any man to zero a rifle for another. It is also a mistake to try to zero National Match rifles at Springfield, fixing the front sight so that it is very difficult to move it thereafter. As a general rule, the zeroes of National Match rifles when they get into the hands of shooters are found to be a quarter right or left on already zeroed guns." Major Casey suggested, and later moved, that the front sights on the 1924 Springfields be not fixed with a pin but held by contact between the set screw and the removable base. This motion was lost.

Further opinions as to the sighting equipment of the Springfield were brought forth by the question of equipping the 1924 rifles with receiver sights. Called upon to express his opinion, Colonel Stodter said that there was no question as to the superiority of the receiver sight over the present form of rear sight. "The present rear sight is an optical crime," he said. "If a peep sight is going to be used, the closer to the eye the better. On the other hand, no receiver sight has been

adopted, unless you consider the equipment of the .22 caliber Springfield as an adopted sight. The Infantry Board has been experimenting for many years with receiver sights and has come to no conclusion. The expense of making this change must be considered. The most popular receiver sight now being used in connection with the Service arm is the Lyman 48, but this would cost about \$6.00 for every rifle. Shooters, no doubt, would be very glad to have a receiver sight, but whether the desirability of this form of sight will outweigh the expense is a question."

In response to a question, Lieutenant Wotkyns said that at Camp Benning 250 men of all classes of shots had been trying out the receiver sight and that in field firing the advantage was all with the receiver sight, but that no such great advantage had been noticed in target work on the range using the present type of sight. Concerning troubles with the receiver sight, Commander Osburn said that that rested largely upon other considerations: If the recoil of the rifle was taken up on the rear screws, he believed that sighting troubles would result when receiver sights were used, but if the recoil was taken up on a recoil shoulder there would be no trouble.

The principal objections to the inclusion of a receiver sight among the specifications for the 1924 rifles came from Major Lee O. Wright, Recorder of the Board, and Colonel Waterbury. It was Major Wright's opinion that to equip National Match rifles at this time with receiver sights would be very far from Service rifle specification. "I believe," he said, "that if this board adopts a sight not adopted by the Infantry it will be quite a departure and that weapon would no longer be a Service arm." Colonel Waterbury expressed the opinion that changes should first come to the rifle as issued and that these changes could later be incorporated in the National Match weapon.

Major Waller, while believing in the receiver sight for the service weapon was not favorable to the inclusion of such sight in the 1924 specifications until a sight satisfactory in every way has been found. Major Wright moved that the 1924 rifles be not equipped with the receiver sights and his motion was carried, with one dissenting vote.

This vote is explained is not to be regarded as a vote against receiver sights. Every member of the board declared himself in favor of this type of sight, but each regarded it as too great a departure at this time.

In connection with the rear sight discussion, Major Fulton of the Coast Artillery Corps attacked the index of the present rear sight and advocated an adjustable index, by which the zero of a rifle could be constantly established. If such a change were made, it was pointed out it would automatically dispose of the question of the movable front sight. It was brought out also that the index marks at present are very poorly struck. The board was informed of the custom among shooters to scratch an individual index mark on their rear sights, an expedient which has

proven practicable. Following the discussion, Major Casey moved that the zero graduations on the 1924 rifles be made with the same fineness as those upon the movable base, and that the Ammunition Board recommend to the National Board that the rules of the National Matches be modified to permit a shooter to scratch a zero mark on the polished service of his sight. This motion was unanimously adopted.

Nothing in the entire session—except a discussion of the proper method by which machine rest targets should be measured and which came later—provoked the interest that the pistol grip stock discussion brought up. When General Ruggles called upon Colonel Stodter to state the facts which would be involved in the board's decision, he said that he had long objected to the present service stock; that it was too short and that the drop was too great at comb and heel.

"The present service stock is too short for any man who is large enough to be a soldier," he declared. "All experienced shooters agree that it is too short but there are various opinions as to what the proper length should be. Both the old .45-70 and the Krag have better stocks than the Springfield. At the National Matches practically every man is handicapped by being unable to assume a proper position. The support of the face on the stock is one of the important elements of rifle shooting. On the other hand, as in the case of the receiver sight, to put on a pistol grip and change the dimensions of the stock would be considerable of an innovation. There can be no question as to the desirability of this proposed change."

Major Wilhelm was asked as to what action the Army boards have taken in respect to proposed changes in the stock. He told the board that the Cavalry and Infantry Boards had agreed in recommending a stock 13 inches long, with a drop at the heel of 3 $\frac{1}{2}$ inches, with a drop at the comb of 2 $\frac{1}{4}$ inches, and from the middle of the trigger to the front of the grip cap 3 $\frac{1}{2}$ inches.

The dimensions which were approved by the team captains were practically the same as those on the .22 caliber Springfield stock, calling for an over-all length of 12 $\frac{1}{2}$ inches, with a drop of 1 $\frac{1}{2}$ inches at the comb and 2 $\frac{1}{4}$ inches at the heel. Commenting upon the dimensions recommended by the Army Boards, Colonel Stodter said that the drops seemed to him too great, that they had evidently been taken from the off-hand position, while the majority of match shooting was done prone.

The board was advised that pistol grip stocks could be furnished by Springfield Armory at very little extra expense but there were members of the board who objected to the approval of a pistol grip stock upon the same grounds that they had objected to the adoption of a receiver sight, namely, that such would be too great a departure from the present service type of arm, which is specified for the National Matches. As a result of the discussion and a consideration of these facts, it was moved that when the War

(Continued on page 18)



Marksman Spare that Tree

By F. C. Ness

Left—A box-elder on which a few .45 Colt's grouped.
Right—Another example of shooters' thoughtlessness.
Below—Targets resulting from earthen banks, tree trunks and similar extemporized butts.



In a certain Minnesota town slightly under ten thousand there are a number of duck, rabbit, partridge, squirrel, quail, fox, target, and coon hunters who like to get out occasionally and ease up their trigger fingers. But there is no conventional place to go for their shooting, because there has been no concentrated effort to secure or provide such a place. Indifference, side-diversions, and expense have severely precluded any adequate philanthropic or united action, showing that these sportsmen lack organization. Attempts to organize in the past have been defeated by the clannishness of the population making up this factory town. There has been too much *distinctive* grouping. For instance, there is the small trap-shooting group—because only a few can afford it—the gallery or .22 rifle clique, the bunch who only care for running shots or flying targets, the pistol and revolver clan, the hunting-rifle clique, whose members sneer at stationary targets and miniature arms, and finally, the pest hunters, who must hike across country to get what, they consider, is the only practical kind of practice.

We did organize a rifle club of a hundred members, rented the second story of a creamery, held a few local competitions, finally dividing into two factions—the Red and the Blue—captained respectively by the gun-store proprietor (now retired) and yours truly. Half the members didn't show up. Perhaps we didn't make it attractive enough, but I blame the "clique." Some of the members only cared to shoot at the running rabbits, ducks, and squirrels of the motorized equipment. And then there was the hand-gun crowd who, individually, felt they were discriminated against if they couldn't have things their way, and they didn't give a tinker's dam for our rifle matches. Some of them came with cheap, nickel-plated, .32 revolvers and filled the gallery with the smoke of black powder. We had a lot of fun the first month, but we couldn't stand divided, and pretty soon there were not enough members showing up to hold a match, and, reluctantly, we gave up. There were kicks of course, a few

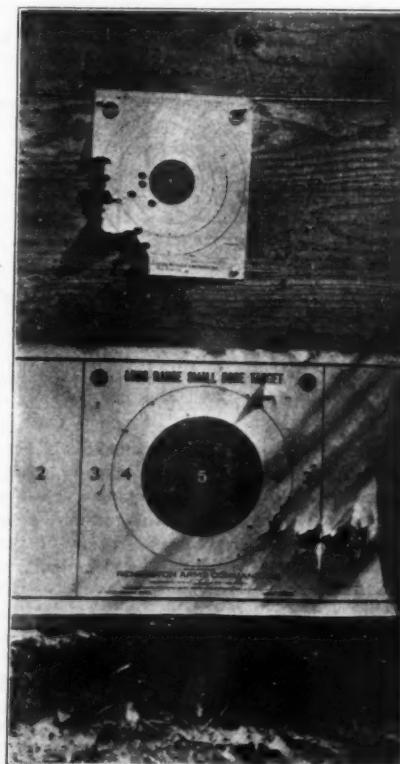
of the disgruntled going so far as to condemn the club as a money making scheme, but their dues were promptly refunded. I'm sure that I got much more out of the short-lived rifle club than ever I put in.

The same was true of the trap-shooting squad. They had a bit of pasture at the western city limits with a trap house opening towards the bottom lands of the bay. For a long time weekly shoots were held. But one day their ringleader said to me, "Hell! If those fellows expect me to do all the work all the time they've gotta 'nother guess coming. If the rest of the bunch ain't interested enough to share a little work for their fun I'll let the

club go "plumb." He did quit (and is now tossing horse shoes) and not enough incentive remained to keep the club going. We used to go out there and hang bottles, flower pots, and "lost birds" in the bushes fifty yards in front of the trap-house, and try how fast and how many we could break from prone on the roof with a magazine full of .22 N. R. A.'s in our Colt automatic.

The hand-gun crowd had a range under the gunstore that has been gone for many years, too. The only other shooting organization is the local militia. They hold gallery shoots in the armory basement, and last year Company X constructed a crude 300-yard range at the east end of town. On a lucky Sunday twelve members show up for practice. Even "turkey shoots" no longer means burning powder. Hereabouts it means "rolling the bones" or playing cards at so much per hand.

All of which means that the individual gun lover must shift for himself and do his shooting where he may and how he can. I have burned powder in every available ditch, stone quarry, and pasture in the vicinity of this town. Forced to find a suitable place for his practicing, the extemporaneous shooter is introduced to a new problem—impromptu target butts. Wooden fence gates or dead trees of sufficient diameter are not always available, and when the target is pegged to an earth bank, lead spray and splintered rock or dislodged pebbles have a habit of rebounding and raising havoc with the paper upon which the marksman is imprinting his group or score. Also on a tree, bark and wood splinters present the same objection, and, when a long target like the C-5 is nailed to even a large tree, only the bull or black centre is at right angle with the line of fire, the edges rounding off at an oblique angle more or less in line with the shooter. This is O. K. where the range is short enough to get even the sighting shots in the black, but when an occasional wide shot goes out at 9 or at 3 o'clock the paper is frequently torn in two. Lastly, there is a further aspect to tree shooting that every sportsman worthy of the name takes into consideration and deems of paramount



importance—the Golden Rule applied to shooting: "Unto others as others unto you."

Adjacent to the golf links of the town mentioned above is a small woodlot with many bullet-scarred trees. Being at the city limits, it is too convenient for the practice-bent shooters of the town. At the southern border stands a medium cottonwood especially tempting, attested to by the mutilated trunk. Nearly every caliber hand-gun bullet, from the .22 long rifle to the .45 Colts, and a wide range of low, medium, and high power rifle bullets have been directed against this victim of shooters' thoughtlessness.

We were wont to hike out, shooting gophers with our pistols in nearby pastures, and one morning we encountered the owner of the abused woodlot. We had killed a great many of the little rodents, nearly a score of them on a single morning, and the farmer knew this and appreciated it. But he told us he realized a number of shooters were using his trees for target butts and wished they wouldn't. He said the trees were showing the effect of the continual bombardment and as trees were scarce on his farm he wished these shooters would nail their targets to stumps, dead trees, or against banks where no damage could be done. He added that he had no other objection to shooting anywhere upon his farm as long as ordinary care was taken. His generous, broad-minded and thoroughly justifiable attitude won my immediate respect and made me feel just a little ashamed because I was not entirely innocent, and I told him so, offering to pay any material damage he could estimate I had probably done. He assured me that the pests I had killed made it quits, and that I was welcome anytime as long as I continued using my portable target holder.

Those fortunate shooters who have access to a permanent properly equipped range do not have to contend with this problem. My sister lives in the rural districts, eight miles from here. An old log road slants up the wooded hill behind their home. Half way up this road, about 300 yards from the house, I have erected a target butt with a solid tongue-and-groove, matched fencing, face, 7 feet long and 3 feet high. This is big enough to accommodate two 3 x 3 in. papers side by side for testing shotgun patterns. It is a simple matter to stick on my pistol targets with thumb-tacks, and the bullet holes when the shooter finishes for the day, he merely has to pull out the long pegs and roll are always clean-cut as the bullet makes them.

But the rub is: the inconvenient distance—eight miles—and nearer than this no place is available. The two mutilated targets are shown thumb-tacked to this butt, after having been shot while nailed, respectively, to a tree and pinned against an earth bank.

A simple target holder can be made from a piece of canvas or burlap approximately two feet square, and tacked to two pegs three or four feet long. When driven into the ground far enough apart to stretch the bottom edge of the cloth, the top can be stretched by wedging a stick of the proper length between the tops of the two pegs. This leaves a nice flat surface for the target, which can be pinned to the stretched cloth with common pins.

trees, or fastened with four lengths of common clothesline secured to each corner of the cloth. Canvas is much more durable than burlap or gunny sacking for the purpose, of course, but it is also heavier to carry and more expensive. The burlap can be made to last longer by cutting out a circle in the centre the size of the target "black" and by taping or reinforcing the edges of the cut. The centre soon becomes shot out anyway, and being taut, the frailer goods stretches and tears unless it is reinforced as recommended.

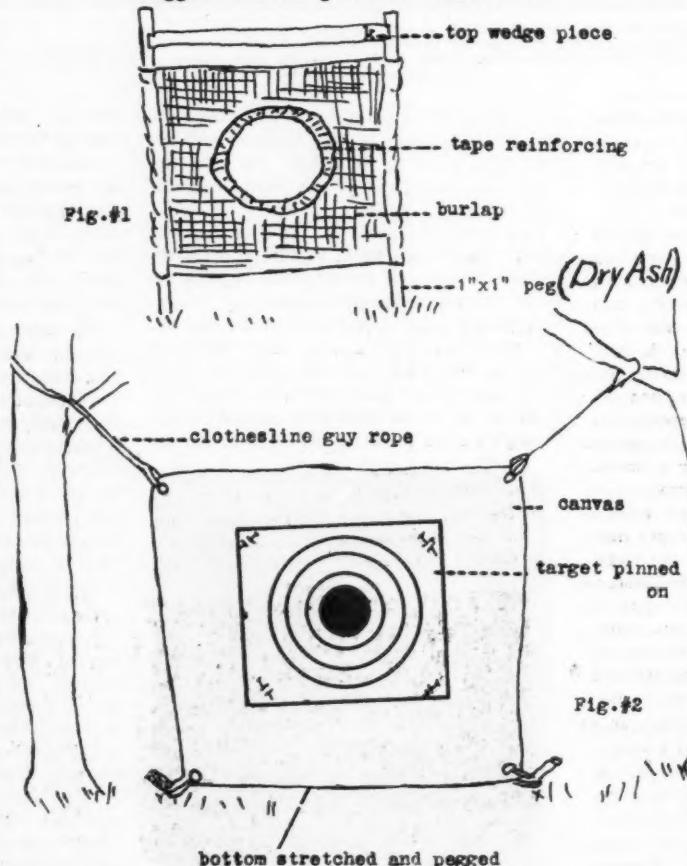
There are many advantages connected with the use of a portable target holder. Trees are more or less permanently anchored and cannot be placed at will to suit the light and

a bank or hill where his stray bullets are certain to be stopped before they can do harm. There really is no excuse for nailing our targets to other peoples' trees, except, perhaps, where there is a forked trunk, affording a limb for each edge of the paper and leaving the bulb in the clear between. Even then, our gun might group to the right or left and connect with one of the limbs. I am enclosing a photo of a forked boxelder to which a twenty-yard pistol target had been nailed in the manner described above. The .45 Colts grouped to the left of the bulb, and practically every bullet (from 235 grs. to 260 grs.) passed into or through the limb of the fork on that side, the result being that the five-inch limb was badly shattered and nearly severed from the main trunk.

A few nails or even a few bullets driven into a healthy tree, perhaps, do but little harm, but it is the grouping of shots that raises particular havoc. And groups are the ultimate aim of all marksmen, whether we are seeking scores or learning the mean dispersion of our ammunition. We may deem our selected tree-victim of but little account or even worthless, but, surely, that is for the owner of the

tree himself to decide. No sport or recreation can successfully survive if the mutilation or destruction of neighbors' property is involved. The elimination of the few objectionable features of target shooting ranges in most cases calls only for a desire to be considerate of the rights of others. Entrusted with the duty to protect the interest of the generation of shooters sure to follow us, certainly it behoves us sportsmen to so deport ourselves in field and forest that the owners thereof will hang out the "WELCOME" sign instead of posting the "NON TRESPASS" notice.

Suggestions for portable target butts.



The Strength of the Springfield Bolt

THOSE persons who have been present at some festive occasion when a Springfield found itself in a dispersing mood will have noted the pleasing fact that while the receiver might take itself apart and vanish into thin air, the bolt rarely shed its lugs under the worst provocation.

Yet the belief is common in the ranks of the proletariat that the lugs of the bolt represent the weak link in the chain which holds the cartridge to its work in the barrel.

Some of this is due to the mechanical and obvious fact that they prevent the bolt from backing up by turning down behind shoulders in the receiver, and because the lugs, bare and unashamed, look so small and sort o' trifling. The amount of metal in the receiver available to the lugs for anchorage is much less apparent to the casual glance and gets much less attention.

The layman seems to overlook the fact that the metal behind which the bolt lug anchors itself doesn't amount to much more than the lug, and is besides the target for the escaping gases when a case ruptures around that unsupported head.

The entire scheme of locking a bolt closed on a rimless shell is about as mechanically feasible as one of these spark intensifiers sold to incautious persons for the plugs of the motor car. It is merely the development of a crude scheme for locking rimmed shells into rifle chambers, and as long as the brass case itself plays so large a part in the retention of the gas where it belongs, the strength of the rifle will depend as much on the resistance of receiver to escaping gases as to the actual backthrust which the cartridge might exert on the bolt head.

When a rifle is developed which completely covers the weak brass case-head, then there will be safety in using nearly any old sort of case giving reasonable obturation, because supporting the weak brass will be strong steel, which is the right way to make the mechanism of a rifle. All we should ask of brass is reasonable gas seal in firing, reasonable resistance to storage in spite of the neck strain, sufficient temper to unlock from the chamber walls and to prevent flowing out through the minute gaps which any moving bolt must leave in its junction with the barrel-face. The present gap is considerably more than minute.

I have been present during the celebration, or have later examined the remains of perhaps a dozen Springfields which have been blown up, intentionally and otherwise. These figures, however, need not be disquieting, inasmuch as it presents fifteen years pretty persistent service rifle experience, and then three years duty in the Army in a position which would often bring such cases to my attention.

I do not remember one of these instances where the bolt also shed its lugs. And, while there have been such occasions, I happen never to have seen a bolt blown out of a

By Capt. Edward C. Crossman

rifle, leaving the receiver ring unharmed and proving that the fault lay with the lugs.

I have seen the lugs partly crack off of four or five different bolts—that is, one lug crack clear off and the other partly, or both commence to show a crack. One of these was a badly head-spaced rifle fitted with a new barrel and an old bolt, the others were faulty bolts put out one year by Rock Island, with the heat-treatment not matching up with the carbon content of the steel.

Ordinarily, however, the pressure heavy enough through straight back-thrust to crack the lugs off a bolt, would also be enough to rupture the case and rip the receiver off the rifle, in fact this contingency is much more probable as shown by the history of blown up rifles. And when it does so happen, the receiver quits before the bolt gets much work, and so the lugs remain, when they might have quit had everything else stood up to its work.

Properly treated or made of the correct material, the bolt lugs give us a considerable margin of strength.

In the early part of 1919 I spent a few days at the Rock Island Arsenal in connection with my duties as an army captain, and while there Major Penny, formerly of Winchester, undertook some demonstrations of the superior strength of nickel steel for receivers and bolts, which was a hobby of his.

We therefore adjourned one morning to the testing room, wherein reposed a powerful machine for indicating the strain necessary for shearing off the lugs of a bolt.

In this great mass of steel the bolt is hung vertically, supported by its forward lugs, while the rusher head rests against the bolt head, the actual thrust being registered on a beam similar to a scale.

The first bolt tested was a Springfield, of days prior to the new heat-treatment, I think, although as to this I am not positive.

At 20,000 lbs. actual weight the lugs sheared off the bolt.

We put four more through the machine, the average being 21,500 lbs.

Then we put a nickel steel bolt in the machine, and turned her on, and watched the beam. When the weight went up to 32,000 lbs. the lugs slowly parted from the bolt, in about the same reluctant fashion with which a chaw of Battle-Axe lets go from its parent plug, or the way you shear off a nice chewy piece of taffy. There was no sharp jarring let go, just a sort of oozing away from the main bolt, if you understand what I mean by the expression.

The mean of five bolts so tested was 31,000 lbs. actual measured thrust. This does not mean foot-pounds, not yet pounds per square inch, but a weight of fifteen tons. I still have a couple of wrecked bolts in my collection.

As further proof of the strength of the

nickel steel receiver and bolt as made by Rock Island, we sought the shooting house, and there inserted into a new rifle a cartridge loaded with the pleasing charge of 37½ grains of Bulls-eye and the service bullet.

This is a high velocity load, but you won't find it listed in Mattern's reloading serial, it is a little too speedy for Mattern, who is old fashioned. It gives 100,000 lbs. per square inch and should not be used with war-time cases. (Is Major Whelen present in the house?)

So we put the poor gun—I hated to see 'em do it even with my thirst for information—into a sheet-iron box affair with a hinged lid, and we put the lid down and fastened her shut and pulled the trigger.

Immediately thereupon there ensued what was apparently a fight between a boiler explosion and an eruption of Katmai, with the boiler having all the better of it.

So we called out the fire department and opened up the steel box.

Outside of a few minor details the rifle looked about as it did when we put it into the box, but it will never be the same gun again.

The main thing was that the bolt and receiver remained intact with 100,000 lbs. pressure or double the service wallop.

Certain minor details were to be regretted, such as that the extractor was blown off and the bolt locked shut because the brass case had been smeared around the works as if it had been made of pancake dough instead of brass. Of course, gas and smoke and fire and brimstone erupted from the back end when the gas got out, but outside of a little flying brass, etc., the shooter would have remained as intact as the rifle—in fact, I don't think he would have had even his extractor blown off.

Then they went ahead and did it to another rifle, a nice, shiny, brand new service gun, which they said they did now and then in routine testing. About the same thing happened, except that the gas also pushed out the magazine floor plate and cracked the stock.

Major Penny wanted to know if I wanted to see still another one tested, but I burst into tears and said no, for him to record it blown up in experiment, and to then take it around the corner and give it to me, and I'd take it on home and test it for the next five years with service ammunition. It had a peach of a stock, too.

But he wouldn't. These Ordnance birds are a hard-boiled lot. They don't think anything at all of blowing up one to a dozen lovely rifles which would punch bulls-eyes for the next four or five years, but when it comes to having one of them taken away and given a good home, and clothed and fed and educated at your own expense—nothing is stirring. They don't have any more real affection for a rifle than you have for a kitchen fork.

But, getting back to that pressure machine test of lug strength, that 31,000 lbs. required

(Concluded on page 19)

Safari Days

Hunting Sitatunga in Victoria Nyanza

By Mrs. Florence H. Morden

PROBABLY fewer sportsmen, hunting in Africa, come out with trophies of sitatunga than with any other species of African game. Many do not even know of this most interesting type of antelope, closely akin to the bushbuck, which is to be found in some few swamps of the Upper Zambesi, a few in the Congo, and on some inaccessible islands in Victoria Nyanza. Doubtless in a few years the animal will be practically extinct, for it is now known to be one of the hosts of the deadly sleeping sickness fly, and the British Government throughout Africa is taking urgent steps to completely exterminate it.

The sitatunga is a small antelope, something like the bushbuck, and about the size of a small American deer, though perhaps a bit heavier in the body. The color of the males is a dark gray; of the females a reddish brown. The hair is sparse and rather long and quite decidedly coarse in texture. The males only carry horns and these are delicately twisted, rising in a straight line with the face and spreading slightly. The feet of the sitatunga are peculiar. They have noticeably long, narrow hoofs, very pointed, and the ankles have a very free play, allowing the feet to lie on the ground well back of the actual hoofs. This is doubtless due to the habits of the animal, which spends much of its time in wet, marshy ground, where only a flat, splay foot would give the required support.

We were journeying from Kenya Colony to Uganda last January, and our hunter, Mr. Percival, had hunted sitatunga the year before in the Sesse Islands in Victoria Nyanza. Consequently he knew the necessary steps to take to get permission from the Government officials at Entebbe, allowing us to go onto the forbidden islands. At one time the Sesse Islands were rather thickly populated with native families, but wave after wave of sleeping sickness passed over them, taking such heavy toll that when finally the Government ordered the remaining families off the islands, there were pitifully few to be removed. Since that

time a few of the islands have been freed of sitatunga and pronounced safe to live or camp on, and it was of course on one of these that we pitched our camp. One day's hunting on the forbidden island was sufficient, for we quite realized that we were venturing on a spot which was, to say the least, no summer resort, and we were well satisfied to get our game and be gone.

We made camp on Kombe Island, and early the next morning set off in crude, native canoes for Dambe Island, where we were to shoot. The canoes were just rude, hand-hewn boards, sewn together with thongs and the holes stopped with nothing more substantial than mud. They were about thirty feet long, and manned by eight native paddlers, a brazier—most necessary adjunct to the crew—and a steersman. The distance to Damba Island was about four miles and it was pretty to

see those half naked boys paddling their picturesque craft. We timed their strokes and they made an average of one stroke a second, which seems incredible, and gives some idea of the swiftness with which we moved through the water. The heart-shaped blades of their paddles dipped into the water and swept by like lightning. As they paddled they sang queer half-musical native songs in which one man led, and the rest came in with a sort of subdued chorus.

As we neared the island the water grew rough, yet these eight men dug into the waves and swept on. Sometimes the water splashed high, and I, sitting in the forward bow, got thoroughly wet. When I did the boys rowing would flash into truly wonderful smiles, teeth showing whitely out of black, black faces, as though to say in native fashion, "Ain't we got fun?" When we landed on the



A very good sitatunga head. Note the peculiar splay feet, adapted to traversing the marsh lands in which this animal is found.





Another specimen of the rare sitatunga which will soon be completely exterminated.

island we had only time to make for a huge tree before a storm caught us. The rain came down in torrents and soon the wetting I had got in the canoe faded into insignificance compared to the real soaking we all had now. Fortunately, it did not last long and we were soon able to start off.

The island we found covered with a dense forest, a forest like nothing I had ever seen before. Huge trees towered heavenwards, the trunks curiously shaped and the branches making a green ceiling so dense that only tiny patches of blue sky showed through. Hanging moss and twisted vines hung from the tallest trees and showed, like a monstrous serpent, writhed and snarled among the undergrowth. The whole effect was something like that which Howard Pyle used to get in those fascinating illustrations of old fairy tales. Underfoot was so deep a cushion of moss that our feet seemed to sink softly into a kind of fairy carpet. Parrots flew overhead and monkeys chattered high above us. Frag-

rant flowers underfoot and delicate orchids swaying in the breeze gave the last detail of perfection. Yet here lived and menaced the deadly tsetse fly, one of the dread dangers of Africa. From this paradise the natives had been driven like Adam and Eve from the Garden of Eden, though for no sin of their own, but because the graceful animal we had come to hunt was a natural host to the tiny fly which carried the deadly poison in its bite.

The sitatunga spends much of its time in marshy lands, sometimes lying almost submerged in water where a man could not possibly follow. When frightened they invariably take to the water, and the natives in hunting them frequently fire the marshes, driving the animals out into open water, where they make easy marks for bow and arrow. I did not get mine in the marshes, however. After the rain cleared away we divided our party, Mr. Percival and I going one way, and Mr. Morden another. We began our stalk hopefully, for we had been told that no one had been on Dambe Island for a long time. Does we saw



Miss Morden and her native gun bearer, Saa Sita, which means "Twelve O'clock"

in great numbers but did not shoot. Twice in the fairly early morning I got a shot at buck, but did not hit them. I can only think the shadowy forest must have blurred my vision, for they were not very far away. Finally as we were returning to our lakeside camp at noon, we sighted a fine buck through a tangle of undergrowth. He stood quite motionless for several moments, his head up, his ears forward. He obviously sensed our presence, which must have finally confused him, for he suddenly came crashing through the bushes, straight in my direction. A shot in the chest was not difficult and he fell not more than twenty yards from where I stood. He was a fine buck, with the best horns we got that day. We took the horns and cape-skin, of course, and also the four feet. In the afternoon I shot a second buck, good enough but not so good as my first. Mr. Morden came in with three nice heads and two totes, meaning to complete a group for the Field Museum, but he unfortunately delayed getting his doe until it was too late, and so failed to complete the group.

About four o'clock we started back to our own island, the boys still singing, still paddling swiftly with no sign of fatigue. It was desirable to get to land before dusk, as hippos were plentiful and so were crocodiles. It is a playful habit of the hippo to upset native canoes. The hippos themselves do no further damage, for they are not carnivorous animals, but the croc may be counted upon to finish the job, and the thought is not pleasant. We saw a few hippos near some rocks, but none molested us, and we made a safe landing about six o'clock, which is dark in that Equatorial land. The next day we returned to Kampala, and this most interesting part of our African hunt was over. As I have said, the day will come soon when the sitatunga will be killed off. It is already undergoing steady extirmination, and is rare and hard to get. Not many either know of their presence on these Sesse Islands, or are able to get the official permission to go after them.



Native canoe approaching forbidden Island

Target Rifle Shooting in High Schools and Colleges.

By Walter R. Stokes

Part 1.

IT IS submitted that today there are generally recognized at least three well-established and universal aims of school and university education:

1. The imparting to the student of facts of direct utilitarian value and the developing in him of physical skill of similar value.

2. The developing in the student of mental and physical capacity which will enable him to grasp and deal with any problems likely to confront him.

3. Most important of all, the developing of character in the student. By this is meant particularly the developing of a balanced, introspective will, of which the body and the emotions are servants. This quality of mind is the solid foundation upon which the progress of man is building.

It will be observed that the studies and sports which are now generally taught in schools and colleges all tend directly to carry out the first two of the aims here stated, and that they all tend somewhat to promote the third, but that there is no sport or study which has for its fundamental purpose the development of character, though there is certainly need of something of the sort.

It will be agreed that the present main reliance in character-building is unquestionably upon the personal example of instructors of high and impressive character, but that teachers of this type, particularly those of desirably impressive character, are not always obtainable. These two observations lead to the conclusion that if a self-impressive, character-building study or sport can be found it will prove to be a needed and valuable discovery.

Certain additional requisites of the object of this search should be recognized at the outset. It must be realized that the earnest attention of young people is not easily enlisted by the mere statement of abstract principles; that instruction should appear in a garb which catches their interest, though not to the point of subordinating the fundamental results to the attraction. It must be borne in mind that neither lecture nor personal example of an instructor is likely to have the deep and lasting effect upon a student that his own personal experiences will have; hence that in so far as possible he should be taught by giving him the right kind of personal experiences.

And of course the actual practicability of any proposed matter must not be overlooked.

* * *

Through personal experience and observation, I have come to believe that the study or sport of target rifle shooting, as described and explained in the following pages, reason-

ably fulfills the needs and requirements which have here been dealt with. Nothing revolutionary, spectacular, nor astonishing is suggested to follow from the practice of target rifle shooting in schools and colleges, but I do believe it to be a very valuable addition to the program of school activities for the reasons which will presently be stated.

Before touching upon any of the details of actual shooting it seems desirable to make some investigation as to what, in a general way, are the more important advantages and disadvantages which appear to attach to target shooting in educational institutions.

The one thing above all others which has impressed upon me the educational and character-building value of target rifle shooting is

RIFLE PRACTICE is coming more and more to the front in educational institutions. Each year larger numbers of students—especially in High Schools and Colleges—are taking an active interest in marksmanship. Therefore in connection with this activity there are constantly arising two questions—first, how best to conduct rifle practice in schools, and second, of what benefit is rifle practice likely to be to those participating in it?

The author, Mr. Stokes, has given years of study to these problems and his conclusions will be of benefit to school officials throughout the country.

THE EDITORS.

the fact that a rifleman must necessarily work out his most difficult problems wholly unaided, and that in doing so he is forced to do a great deal of self-analysis to attain the ends which he keenly and instinctively seeks. He is compelled to this self-analysis because the problems of flinching, general muscular control, co-ordination among eye, brain and finger, and the psychology of nervous agitation, force themselves upon him every time he fires, and linger in his mind afterward. These are not mere problems of dexterity; they are problems which in the solving call for the development of mental balance and steadiness. In no other sport as in rifle shooting will such immediate and disastrous results follow from the slightest abandonment of active self-control, because while in most other sports the active emotions are a positive aid, in rifle shooting the increased blood circulation attendant upon the experiencing of uncontrolled strong emotion is fatal to the best results; consequently the rifleman is directly required to school his every emotion and to analyze himself carefully in doing so. It is this awakening in a young rifleman of a consciousness of what self-analysis means and

of what it will do, that constitutes the great value of rifle training.

* * *

There are a number of other things of distinct educational advantage about target rifle shooting; it develops a keen appreciation of the inevitable association of cause and effect, through the fact that the results on the target are always due to some cause which the firer knows or will take care to find out about, since it is necessarily clear to him that he must do so to be successful. Concentration—the power to hold the attention steadily upon one subject—is certainly one of the dominating factors in practically all great human achievement, and the development of concentration and of appreciation of its value is one of the things which the young rifleman particularly acquires, since constant, long-continued, unwavering concentration is in a most peculiar degree essential to his success in shooting. In these vital matters rifle shooting trains the sub-conscious and the conscious mind of the young shooter.

Among other advantages of target rifle shooting in educational institutions are the facts that few physical deformities serve to bar one from participation; that no beginner starts with any very great apparent original advantage over another; that there is no unhealthy physical or mental strain involved; that the sport may conveniently be made a life-long avocation; that there is slight lure of professionalism possible because there is little of the spectacular developed; that interest in mechanics is aroused through the study of the principles of rifle mechanisms and firing; and that either boys or girls may participate with equal benefit and practicability.

* * *

The things which are most likely to be urged against rifle shooting in schools are allegations that it is militaristic and consequently not in keeping with the growing spirit of the times; that it serves no useful pacific purpose; that wide training in the use of firearms, and their ready procurement, will give undesirable advantages to the criminally-inclined; that it is too expensive to be practicable; and that it involves too much personal danger to participants and others.

To say that target rifle shooting promotes a militaristic spirit is to imply that the speaker is not familiar with the sport of target shooting, but is merely stating frightened conclusions resulting from the military symbolism which rifles have acquired through their use in past wars, and not through any such use as is here outlined. It is quite true that a body of trained civilian riflemen is a military

asset of no insignificant value, but, under the methods of training here discussed, the military value of the results is merely incidental to the constructive and far greater value in civil education. This especially should be regarded, that the thing which makes militarism at once active and dangerous—in short, the thing which makes it "militarism"—is the promotion of personal glory and advancement by means of war and preparation for war. This being evidently true, it seems difficult to describe as a militarist a civilian rifleman, without rank or title, who gets from shooting only such advantages as come to him from target practice in itself.

It may be said in support of the third objection noted, that such dangerous instruments as firearms should be put beyond the reach of everyone, so that no question of discretion in their use could arise. But it cannot be denied that, for many centuries yet to come, human nature will not have become such but that there will be, whether because of mental defects or the inevitable deficiencies of the social system, unsocial, vicious,

schools in which it has been established. There have been few accidents throughout the country, and in the exceedingly rare cases in which they have occurred it has been ascertained that the plan of gallery management later outlined herein was not being carried out, though it is simple and is successfully maintained on nearly all school galleries now in operation.

Pistol and shotgun shooting are not advocated for schools because of dangers connected with the former and the expense of the latter and because they are not as valuable educational subjects as rifle shooting.

* * *

At the present time rifle shooting among civilians generally, and in schools and colleges in particular, is encouraged and very materially aided by the Federal Government, through the National Rifle Association of America and the Office of the Director of Civilian Marksmanship, a special office of the War Department.

The National Rifle Association is concerned especially with the securing of legislation fa-

rrorming a rifle club should do so under the guidance of the National Rifle Association, and should take advantage of the assistance offered by the Director of Civilian Marksmanship. The great advantages to be gained through such action are the benefit of the experienced advice and supervision of the National Rifle Association and the reduction of club expenses to a low figure by securing the supplies issued free by the Director of Civilian Marksmanship. Unless at least a part of the club's supplies are obtained in this way the matter of expense is a fairly serious problem to school and college clubs, but it ceases to be so if the Director of Civilian Marksmanship is applied to for supplies which he is authorized to issue.

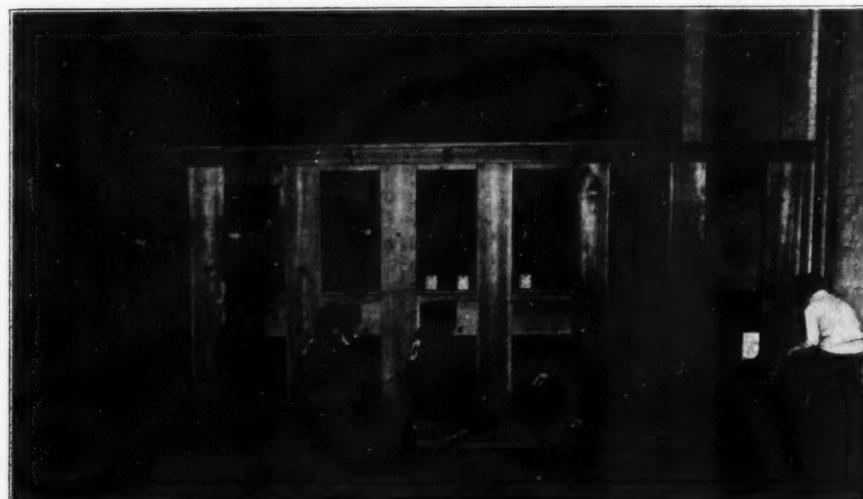
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The interest of a large number of students in the formation of a rifle club can always be gained easily, but the first thing to be done in organizing a rifle club in an educational institution is to enlist the interest of a member of the faculty, who should assume direction of the movement. A club should not be formed unless a gallery, or space for constructing one, is available. If a member of the faculty has been interested and a gallery or gallery site found, application should be made to the Principal, Dean, or Board of Education, for permission to organize a club and equip a gallery. If this is secured, the business of organizing should proceed by application to the National Rifle Association to form an Affiliated National Rifle Association Club. This can readily be accomplished, and soon thereafter rifles, ammunition, targets, and target carriers can be obtained through the Director of Civilian Marksmanship, following the execution of a surety bond to protect the Government against loss or unnecessary damage to the non-expendable material issued. When the material requisitioned from the Director of Civilian Marksmanship has been delivered the club may begin active work.

* * *

In the matter of installing a range or gallery certain facts must necessarily be considered. The site of the gallery must be long enough to provide a distance of fifty feet between muzzle of rifle and target. This is a convenient distance because it is the greatest distance at which shot holes can easily be seen, because the .22 caliber short cartridge is thoroughly dependable at little greater distance, and because it is a standard distance for competitive shooting.

Target carriers are not a necessity, but they should be installed on a school range. The target carrier is a simple wire, rope, and pulley device by means of which the target is run back and forth between firing point and butts. It is convenient, a time-saver, and lessens danger upon the range because no one ever has to go in front of the firing point when it is in use. Its installation in every range is earnestly recommended. Installation plans can be secured from the Director of Civilian Marksmanship when carriers are requisitioned.



The rifle range in the Central High School, Washington, D. C. This type has proven most practical and safe.

desperate individuals who will obtain and use firearms for murderous purposes despite any attempted regulation in the use or manufacture of them. Experience has taught us the truth that lies in this statement. Consequently we need not feel that the criminal class will be materially aided because firearms are openly manufactured and instruction given in their use. And on the other hand the knowledge that most people were familiar with and possessed of firearms would have a strongly deterrent effect upon persons inclined to criminal activities.

As to the useful pacific results to be obtained from the practice of target rifle shooting in schools, previous discussion is regarded as sufficiently explanatory, and the matter of expense is dealt with in a later discussion of the establishment of a rifle club in a school.

The objection that rifle shooting is too dangerous to be made a school sport is answered by actual results in a great number of

favorable to rifle training, the organization of rifle clubs, the conducting of various rifle competitions, the maintenance of American supremacy in international rifle competitions, and the dissemination of information pertaining to all phases of shooting.

The Office of the Director of Civilian Marksmanship issues to organized civilian rifle clubs, free of charge, materials needed in target rifle shooting, such as rifles, ammunition, and targets. Through this Office, also, members of the National Rifle Association may purchase arms and ammunition at Government cost.

These two institutions are the source of nearly all rifle training in this country, and the activities of the two are closely co-ordinated. They offer remarkable advantages to any who are interested in the sport of rifle shooting, and are especially eager to assist school and college clubs. Hence it is most strongly urged that any persons interested in

With the W.J.R.C. at Perry

By C. B. Lister

A "rainy weather" indoor class during the "Junior Camp."



FORTY youngsters, boys and girls, are back in school this year keenly interested in the subject of small-bore rifle shooting as a result of the activities of the W. J. R. C. at Camp Perry. It was the first time in the history of the National Matches that a special effort had been made to provide for junior competitors, and the fact that two score future shooters and mothers of shooters attended the junior school and fired in the junior matches in this initial attempt speaks well for the success of the experiment.

The junior camp was under the immediate supervision of Mr. B. M. Russell, and a special area was allocated for quarters and recreational activities. One of the houses in Commercial Row was designated for school purposes and for indoor activities during the rainy weather. The range was placed on the extreme right of the line, between the pistol butts and pumping station. In order to attract as many young shooters as possible without interfering with the school year, the dates of the junior camp were set from September 3 to 10, the first week of the School of Instruction for the National Matches. The matches followed the general plan of the W. J. R. C. mail matches. The shooters were

divided into two classes on the basis of their performance in the first day's shooting, and firing was carried on on the regular W. J. R. C. 50-foot target, having one-inch bullseye with a three-quarter-inch "BB" ring and one-quarter inch "A" ring. A Swiss match ran through the week, and each afternoon a novelty match of some description was fired. These novelty events took a variety of forms, some of which are adaptable to civilian clubs for gallery work. One in particular proved very attractive to the youngsters, and would probably be a howling success with the older members of the small-bore clan occasionally. "The Big Game Shoot" was the title of the event. Animal crackers such as may be purchased in bulk or in "Noah's Arks" at any grocery store were tied to strings, and each competitor was given five cartridges and told to "blaze away." The individual getting the elephant scored five points, the lion three points, the tiger two points, and each other animal one point, with the exception of the unfortunate who pulverized the jackass. He promptly lost all the points made up until the time that unfortunate incident occurred. To wind up the shooting, Capt. Richards and Virgil put on an exhibition of fancy shooting,

drawing Indian heads with the rifle, etc., and the prizes were presented. In addition to the regular work on the range, which occupied the morning and a portion of the afternoon, a regular schedule was maintained, starting with setting up exercises in the morning, and going through the entire program of the usual boys' or girls' camp, including swimming, hand-ball, volley-ball, etc.

The work of some of the youngsters was noteworthy. Russell Wiles, Jr., who later won the long range individual small-bore championship and then established a new world's record in the Dewar match, is a member of the W. J. R. C., and fired on the junior range during their matches. Miss Katherine Edmonston, of Washington, who had the unfortunate distinction of landing twenty-sixth in the Dewar tryouts, is also a member of the W. J. R. C., and gave the boys a keen run for place.

The W. J. R. C. Camp at Perry this year was an experiment, and as an experiment, it was in every sense a success, and justified its existence as a part of the nation's greatest training school for marksmen. The youngsters were put on a healthy, fixed schedule. They were sent to the firing line in relays, and became accustomed to firing line discipline, and their education in self-discipline was advanced just that much. They learned a great deal about the art of shooting from men who were able to teach them, and what is equally important, they were able to see at first hand the immensity of the National Matches. The impression which they carried away with them of the mile long firing line, of the magnificent bronze and silver trophies, of good natured rivalry, and of keen sportsmanship, will remain for a long time. The W. J. R. C. Camp was for the most part made up of youngsters at the age when ideas and impressions are assimilated rapidly, and there is small doubt but what every body or girl who participated this year will every year feel the call of the National Matches. They will want to return either as individual competitors, as the wives of competitors, or as the interested and understanding mothers of shooters, and they will return to their schools



A W. J. R. C. group on the range at Camp Perry

this year with a perfectly clear idea of the fun that can be obtained in a rifle match. The results of such a camp may not be immediately noticeable but that results have been attained is beyond question.

With the experience gained this year, plus a longer time to prepare, it is a surety that a junior camp at next year's matches would be patronized by several times the number of boys and girls who attended this season. Junior memberships in the N. R. A. were a part of the prizes awarded in the W. J. R. C. events, and it is quite certain that these junior members will take their membership much more seriously than many of their older compatriots who did not earn their affiliation with the Association on the field of competition.

The future of the rifle shooting game rests with the youngsters who are now in school. Take advantage of the natural enthusiasm for shooting which sways these youngsters, seize on their interest and direct it through properly disciplined channels. Make of them not only shooters, but intelligent instructors, active boosters, and the sport will continue to grow after this generation of riflemen has turned in its squadding ticket to the Great Scorer.

The present agitation for anti-firearms laws would never have assumed its menacing proportions had the generation now in legislative halls attended the National Matches at the age of the lads who faced the targets on the W. J. R. C. range at Perry.

Civilian rifle clubs always searching for new members, striving for renewed enthusiasm, can do much worse than to follow out the idea which was practically demonstrated by the W. J. R. C. Matches at Perry. Every club does not number among its members a man capable of handing boys and girls on the range. Almost every community large enough to support a rifle club does, however, possess a Y. M. C. A. with a competent man in charge of its Boys' Work Department or a Community Center with a trained man or woman handling the boys and girls. The idea of opening the club range to the youngsters certain afternoons in the week will therefore kill



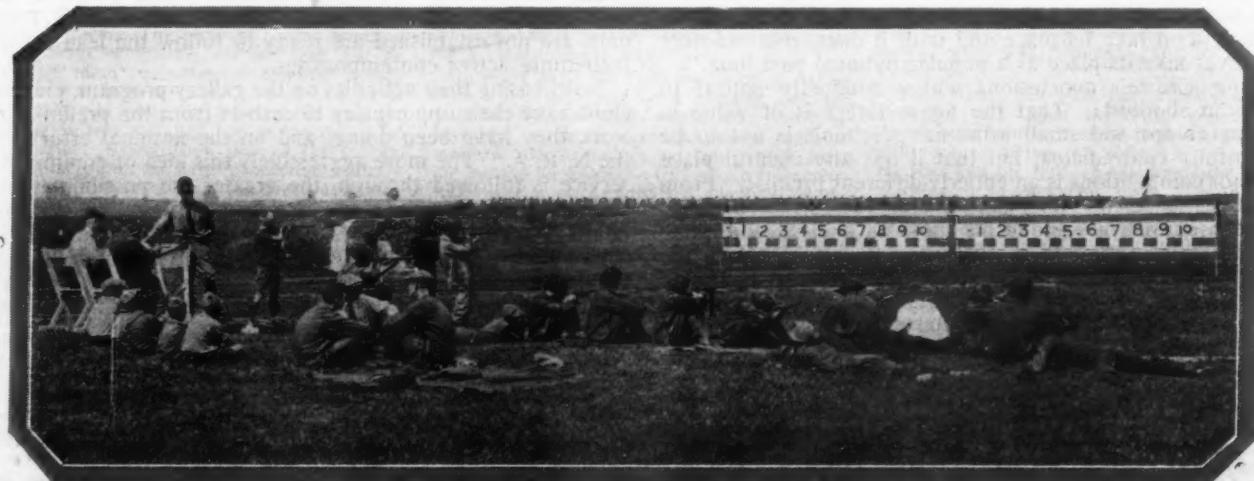
Waking Exercises at Camp Perry

two important birds with one stone. It will supply the much-to-be-desired new blood, and it will serve as an entering wedge for recognition of the club as an adjunct to the community work of the city.

One other important phase of the work must not be overlooked. The sickening number of accidental killings by children pointing "unloaded" guns at one another in play is evidence of the fact that youngsters will, in devious ways, get hold of guns. Not knowing how to enjoy them, raised by parents who know nothing about firearms, tragedy follows. Extension of the idea embodied in the W. J. R. C. Matches at Perry to every rifle club in the country would automatically and immediately reduce the number of child murderers who are started through life each year as a result of ignorance on the part of parents who refuse to understand that the greatest joy of a boy life is to possess a rifle and to know how to use it.

To the riflemen who have been unsuccessfully trying to introduce rifle shooting into

the high schools, Boy Scout councils, and childrens' community recreational circles, the W. J. R. C. events at Camp Perry must come as a ray of light. Not one of the forty was shot, nearly shot, or at any time in danger, and they every one returned to their homes minus the slightest concussion, abrasion, or strain. It remains for the exponents of the safer types of boy and girl recreation—baseball, basketball, track, or what-not—to show any period of one week of strenuous competition at their favorite sport with forty healthy, red-blooded youngsters participating, when they could send the forty of them home with the same record of improved physical condition, vastly improved discipline and mental control, and minus so much as a bruised finger. Any riflemen who has striven to introduce the shooting game into the educational or social institutions of his locality and has met with the customary objection that the sport is dangerous, can point to the W. J. R. C. events at Perry as an absolute refutation of such a plea.



Target Practice in One of the W. J. R. C. Classes.

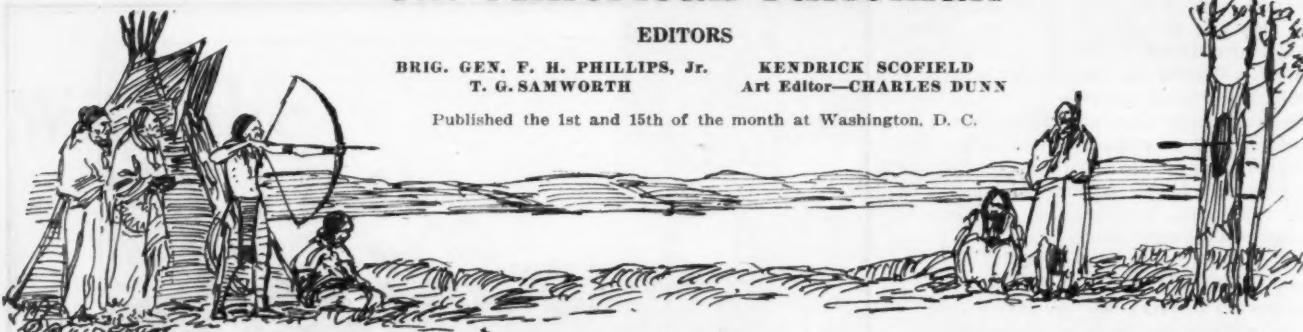
The American Rifleman

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Figure Targets. FROM time to time, seekers after "something different" calculated to lend variety to black-and-white target matches have advocated the adoption of the drab colored so-called figure target. In support of this suggestion, those favoring the idea invariably point out that several seasons the British at Bisley have fired practically all their competitions on the "Tin Hat" target.

There are many features of the British rifle competition system which have been profitably followed in the United States. There are unquestionably others which might well be adapted to our matches. But the "Tin Hat" target is not one which has as yet fallen in either of these categories.

The question of target designs for military matches is of the utmost importance and a subject not lightly to be disposed of. Given the best of rifles and ammunition, shooters will find any competition wanting if the target is unsatisfactory in form or visibility.

This is apparently what has happened in the case of the Tin Hat Target, as witness the comments of Major C. R. Crowe, of Canada, who in discussing the 1923 Bisley, says:

"The competitors at Bisley and particularly the Canadian Team, are gradually awakening to the fact that the standard figure target is no proper aiming object for rifle competitions of such importance as those held at Bisley, where accuracy should be the desideratum and guesswork eliminated."

"In certain lights at Bisley the target becomes an indescribable mass of color and the bull's eye at the moment of discharge will disappear."

"The very best and most definite aiming object is none too good for target competitions wherever held, and a black bull's eye upon a white target, than which there has never been a better aiming object devised, must, in the writer's opinion, soon take its place and until it does, rifle shooting will never take its place as a popular national pastime."

Major Crowe's conclusions will undoubtedly appeal to American shooters. That the figure target is of value in training camps and small arms firing schools is not to be successfully contradicted, but that it has any rightful place in major competitions is an entirely different premise. From long experience the American shooter knows that the man who can consistently group his shots on a black and white target has little trouble in adapting his skill either to the hunting or the battle fields, and that the logical medium for imprinting groups in which accuracy is the prime consideration is the conventional black and white paper target.

Time to Cash In. THIS year, several thousand people, shooters and non-shooters, learned for the first time of the importance of the rifle shooting game on the sporting calendar as a result of the publicity efforts preceding and during the National Rifle Matches. With the pictures of the winners of the various Camp Perry events still fresh in their minds, these people are eligible prospects for the recruiting campaigns of rifle clubs this winter. The Gallery Program affords clubs the tie-in with National Match publicity which they need in order to cash in on the N. R. A. publicity.

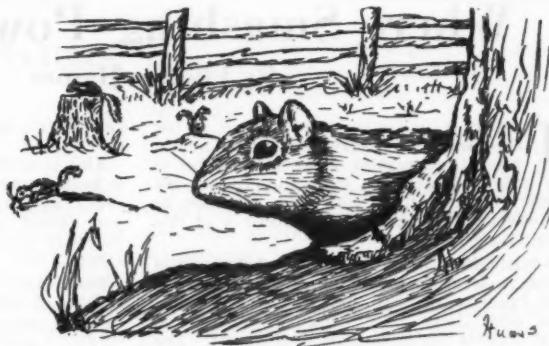
This year several hundred police officers throughout the country in cities from Portland, Oregon to New Orleans, Louisiana, are actively interested in competitive shooting. The introduction of R. O. T. C. work into the high schools and the successful staging of two National R. O. T. C. Gallery Matches by mail has opened up the high school field to civilian clubs who are active enough to take advantage of the opportunity. With the National Guard back on its feet and aggressively going after National Match honors, the Guardsmen become a fertile field for the civilian club secretary to work in. As a result of the unprecedented success of the National Matches, culminating in a shooting year of more than usual activity, every agency in the game has converged to the point where the civilian club has the greatest opportunity in its history to become the center of shooting activities in its community. The police, both municipal and industrial, have all had their interest aroused through the medium of National publicity. It but remains for the active club to sell them on the idea of co-operation by a little personal salesmanship. The high schools where R. O. T. C. units are established are all sold. Schools where R. O. T. C. units are not established are ready to follow the lead set by their more active contemporaries.

Now, basing their activities on the gallery program, civilian clubs have their opportunity to cash in from the preliminary work they have been doing, and on the national efforts of the N. R. A. The more aggressively this idea of community service is followed through, the greater the possibilities for a clean, attractive, and popular range, the less likelihood of interfering city ordinances, and the definite assurance of a rifle club firmly established not only in the locality where it functions, but in the national shooting game. "Cash in" while the opportunity to clip coupons is greater than it has ever been at any previous time.



A Day With the "Diggers"

By L. P. Holmes



IT was the reading of Trim Nat's 'chuck hunting experiences and those of Allyn Tedmon with the prairie dog that started me thinking about the advantages we of the West enjoy in the hunting of that cheery, little rodent, the California "digger" or ground squirrel. His demise is encouraged by the Department of Agriculture and he is legitimate prey at any time of the year. And as a persuader for fine and careful holding, whether with .22 or .06 Springfield, he is in a class by himself.

His favorite place of habitat is, as a rule, a winding burrow in the open hay and pasture fields, but he is not overly particular. A creek bank of sunny exposure, a brush heap, an old stump or tumble down rock wall, a hollow tree, or a rocky hillside all serve equally well as a residence for the "digger" and his numerous progeny. For he is very hardy and very prolific, else he would long ago have succumbed to the poisoning and ceaseless prosecution at the hands of the shooter and numerous natural enemies.

Despite all this adversity, however, the sunny dispositioned little scamp stays with us year after year, season after season, and proves a veritable gold mine to the man who delights in a careful stalk and in the clean kill that results from the accurate placing of a single bullet.

For be it known that this four-legged mite requires a tremendous amount of killing. In proportion to size I know of nothing else in all this wide world that is capable of standing such a stupendous amount of punishment as a fat, grain fed "digger." The lead and shock I have seen him absorb and still keep moving is almost beyond belief, and I could relate instances which would make the most credulous shake their heads. For instance, I saw my brother with a .32-40 Marlin, strike a digger fairly in the chest, at a distance of about 30 yards. The blow of course knocked the squirrel completely off his feet, but he regained them immediately, climbed a side hill for a distance of some 50 feet to a stone wall, then ran along the base of the wall for another 50 feet and died just at the mouth of his burrow. Examination showed the 165 gr. soft point bullet to have penetrated entirely through the squirrel from the chest, emerging just above the roof of the tail. Unbelievable isn't it—but true!

So it can be seen that to hunt this little chap properly one must needs carry a gun of superlative accuracy and with plenty of killing power to do proper work in the field. The .22 long rifle hollow point is sufficient if one is very careful in placing his shots, making either head, neck, or shoulder shot. If one is not reasonably sure of making such hits, they should use a cartridge of higher power.

My own pet outfit for this work is my Model 52 with the 8 power 'scope. Properly held, this outfit is deadly up to 75 yards, and if one is sure of his distance, kills can be made

regularly at a hundred. The average shot offered on "diggers," however, is seldom farther than 60 yards, with most of them under 40. But clean killing at any distance means fine holding, as a two-inch circle is the limit of error.

One of the greatest charms about hunting the "digger" is the season of the year when he takes one afIELD. Late spring and summer mean long, languorous days of sunny contentment in the open, with the elixir of flowers and newly born grasses and leaves hovering in one's nostrils. The chase need not be one of arduous activity, and to saunter along, gun over shoulder, amid the teeming wild life, is in itself a joy sufficient to lure one out.

I well recall a certain day with the "diggers." A soft, balmy, Sunday afternoon in early summer it was, and with full fed contentment I took down the 52 Winchester and with Ted, my Airedale pal, at my heels I sought a certain, well spaced hollow within stones throw of a drowsy creek. There were several old stumps along the sunny side of this hollow and near the edge of the brook was mottled shade and cool, soft grass to lounge in. Several families of "diggers" had burrows under the stumps, and the distance from the stumps to the spot I had selected to watch from was about 50 yards.

There were several squirrels in sight when I arrived, but I did not shoot, for as I said before, one must place his shots just right with the .22 to get immediate kills and I was not sure of the adjustment on my 'scope. As I approached closer the "diggers" dove into the burrows with a final derisive whistle and I proceeded with my preparations. The first thing to do was tack up a small gallery target on one of the stumps and try a couple of shots from my lounging place until I had the little hollow pointed bullets hitting just where the cross hairs rested. Then I settled down for a fifteen-minute wait.

On every hand the birds were rioting. Over there from the crest of a nodding oak the fantastically beautiful oriole was burbling joyously. High overhead a yellow breasted meadow lark drifted by on lazy wings, leaving behind an exquisite trill of silver ecstasy. Along the cool, sequestered shadows of the brook the liquid notes of the thrush made sweet accompaniment to the soft murmur of the water. It was a day wherein the building of dreams came easily.

A restless movement of Ted brought me back to the business at hand. His eyes were shining and his shaggy Airedale head was uplifted as he sniffed the faintly stirring air. Rapidly I searched first one stump then another. There he was! A fat, inquisitive "digger" was peering out from the corner of a protecting root. It was an ideal shot and I sprawled out with sling strap tight. Through the 'scope the squirrel's head showed with startling clearness and I centered the cross hairs just between black, beady eye and

perked up ear. With the crack of the little rifle Ted was up and going, and came trotting gaily back with a very dead squirrel. Score one!

Throughout the whole of the drowsy afternoon I shot at intervals, until when the shadows were lengthening and the breath of evening stealing in from the west I looked down at a row of nine "diggers"; nine without a miss and every one killed clean with a single shot. What rifleman who joys in his holding would not have experienced the thrill of satisfaction I was heir to?

But the day was not yet done. While Ted and I were jogging contentedly homeward a sharp-shinned hawk sailed in and perched at the very tip of a tall eucalyptus tree some three hundred yards away—much too far for a shot. However, by keeping to the winding bed of the creek I saw where I might cut down the distance by about one third. Accordingly, Ted and I stalked carefully along at the water's edge and then crept to the bank and peered over. The hawk was still there and limned distinctly against the fading sky. I measured the distance carefully with my eye. Two hundred yards as nearly as I could judge—and not a breath of wind blowing. Work on the range had proven to me the adjustment necessary on my scope for this distance and when all was ready I crept over the edge of the bank, adjusted my sling and flattened out. Through the scope I could see the hawk was facing me, but apparently had not seen me as yet. I held right at the base of the neck and pulled. It seemed an interminable time for the bullet to get there, but suddenly the hawk sagged and there came to me the welcome phl-u-t of the bullet striking. The hawk clung to his perch for a moment or two but weakened rapidly. Then he fluttered to the ground and was quite dead when Ted retrieved. Another enemy of the young quail coveys was removed. And so ended a perfect day.

Then comes the latter part of July and my thoughts turn from the little gun to the Springfield Sporter resting just above in the gun rack. I swing the old trail comrade to my face and see through the sights the tawny coloring of a speeding buck. The hunting fever burns brightly again, for the first of August sees the opening date for deer. So the "digger" is in for it again. Offhand shooting at "diggers" either sitting or running with the big gun is the finest kind of practice for subsequent work on deer, and I have found it very valuable. It teaches one to hold at a certain spot on a deer, not at the deer as a whole, and the above is the secret of successful shooting at the antlered quarry.

So my hat is off to the "digger." He is a noisy, sassy, cheerful little rogue and despite his bad points I love him for his deathless optimism and industrious persistence. The California ground squirrel is no "quitter." Long may he thive!

Where Smashing Power Counts

By Ellerton James

THREE is likely to come a time in the experience of every big game hunter when the smashing power of his rifle is the sole consideration in putting down big game. In connection with this, consider an experience which happened October 4 of this year.

I was fishing for trout in a pond near Little Lake St. John, in the Province of Quebec. It had been an overcast day, but the sun had just gone down in a blaze of yellow and gold, behind the mountains in the west. The pond on that side was bordered by a swamp backed with low alder bushes. I was fishing about three hundred yards from it, and just thinking it was about time to go home, when my guide touched me, and said there was a moose over there. I put down the rod, picked up the Holland rifle and we paddled over. I could just make out the outlines of a bull-moose against the black background of the alders, but with the glare of the sunset sky in my eyes, especially reflected from the still waters, I couldn't see much more than that. Then he stepped upon something, and I got a perfectly clear outline of his head against the red sunset; then he stepped down again into the water at the edge of the lake. That glimpse told me he was a thirty-five or forty-inch head, and that I didn't want him, but no matter how much I wanted him I could not possibly pick him out over the rifle sight from the absolutely black background of the alders at that range.

To make a long story short, we paddled up to within some twenty-five or thirty yards of him. He saw the canoe and came out to investigate until he was about seventy-five feet from us. I have on the Holland rifle a big white bead night fore-sight that I can flip up in front of the ordinary gold bead. I could not see the gold bead at all, either through the peep-sight or the open sight, so I reached forward, put up the white night-sight and then tried to do something with getting a sight on Mr. Moose. Over the open sights I could do nothing. Through the peep-sight I could get an outline of the big white sight against the sunset sky, and moving down to the black mass of the moose, I could cover the middle of the black spot with my eye looking through the peep-sight. But to save my soul, I couldn't see whether I was shooting at the fore-shoulders or where, and, of course, the big white bead made accurate shooting impossible even at twenty-five yards.

I didn't want the moose, but supposing a big sixty-inch head with thirty-odd points that I did want had been in its place. With that Holland rifle and a 300 gr. bullet with a striking force of something like four thousand pounds at twenty-five yards, I shouldn't have cared a hang where I hit that moose as long as a hit him somewhere amidships. The terrific smash and the terrific tear of that bullet would have put him down or crippled him so that he would have stayed there for me to pump some more lead into, and, of course, my second and third shots would have had to be fully as poorly aimed as my first one. I simply would have had to shoot into a mass of blackness.

Now with anything of less power than the Holland, no matter how much I wanted that moose, I should have been awfully scared of doing any such perfectly blind shooting as I would have had to do, because the smash of the bullet of no ordinary American rifle would have been sufficient to put him down no matter where I hit him, and I will not shoot into any game animal if I think the

chances are he is going to get away wounded or crippled.

This is a typical example of why you want a heavy rifle against heavy game; because every now and then the time comes when you cannot place your shots at all, though you may know absolutely that you want the animal.

Incidentally, as showing the power of the Holland, I shot a small spike-horn moose for meat. I was up within fifty or seventy-five yards. I suppose that somehow or other I must have been careless and shot too low. Anyway, he was standing head on to me, and I fired for his fore-shoulder, intending to range through him, quartering him. As a matter of fact, the bullet struck low, went through his stomach, pretty well disemboweling him, and then came out on the opposite hind leg, just below the haunch. He was a pretty sick moose, but turned to get out of the lake, when I fired a second shot, with a 235 gr. bullet, clear through him behind the shoulders. The first, a 300 gr. bullet, missed the bone, but tore a hole in that left hind leg that you can stick your fist into. I did it. And the guide said he saw the splash in the water beyond where it had gone on. The 235 gr. bullet drilled through from one side

to the other, making a hole where it came out that you could put your thumb in, and pretty well stove up his insides. The moose went down for keeps on that shot.

I also tried out on this trip the suggestion made in "The Rifleman" for having a small special lense put in the corner of my glasses for shooting. I found it worked first-rate on the target and I imagine it would work first-rate for long distance shots with the rifle in the field, but personally for quick shooting I found it balled me up. For instance, I saw a partridge sitting on a tree about twenty yards off, and took my little shotgun, intending to shoot it, and I couldn't see the partridge. I lifted my head from the barrel and there was Mr. Partridge. Eventually I realized that to use that lense I had to be certain to shut my left eye, then shove my head down to where I saw the partridge through the little lense, and then put the gun up onto the partridge, but for quick shooting with either shotgun or rifle, I hadn't time to go through all these maneuvers. I suppose as a matter of fact, though I never knew it, I do all my quick rifle shooting with both eyes open, using my right eye as a master eye. Of course, with a shotgun everybody shoots with both eyes open, and you couldn't do this with a small lense up in the corner of your right eye, because the two eyes would not focus, and in shifting from your ordinary lense in the middle of the right glass, through the edge of the little lense you get a tremendous blurr which is apt to throw you off.

Set Triggers and Telescopic Sights

By Chas. Askins

WAY back, some twenty-five years ago, I heard a noise out among the dogs at day-break. The dogs were in a large yard, with high paling fence, and from the noise I knew that they were fighting some kind of an animal through the fence.

Slipping on shoes, I grabbed a Stevens 25-25 rifle, a half dozen shells and hustled out. I found a nondescript looking bulldog fighting the bird dogs through the fence.

Concluding that the bulldog might be some neighbor's which had wondered by and had his fighting propensities aroused by the penned dogs barking at him, I thought I'd scare the brute by firing my rifle close to him, without hitting him. The distance was about forty yards—keep that in mind.

My rifle was single shot, double set trigger, lopp lever, Mogg telescope of ten power, with open sights on top of the scope. It was by odds the best squirrel rifle I have ever owned.

I fired close to the bulldog's feet, expecting him to break and run like a scared rabbit. He didn't. Turning with the shot, he stared at me for an instant, and then came straight for me at a short, easy gallop, limping a trifle in one hind leg.

My rifle was not an ejector. Trowing the lever, I removed the empty shell, got another out of my pocket, loaded the gun, cocked it, and set the trigger. By this time the dog was within thirty feet. Jamming the gun to my face, meaning to aim through the open sights above the scope, I jammed the piece to my face, and I never have had the slightest remembrance of touching that trigger but the gun went off and the bullet struck in front of the little bulldog. Of course the weapon had not been aimed; I had merely thrown it in beneath the target from which position it could be aimed.

The dog came straight on, neither faster nor slower. Getting within about five feet, he sprang clear of the ground with all four feet. I caught him in the chest with the gun muzzle, diverted his aim and swung him well out and around to one side.

Meantime an old Gordon setter that had heard the shooting was coming down behind him. The prod given the bull almost threw him on top of this setter, at which he now sprang. The Gordon dogged him, and then finding that the attack was to be renewed, turned tail and ran for the house, with the bulldog hard after him. The setter beat him to the porch, under which he went. The bulldog never stopped to fool with the Gordon, but galloped on around the house. When I got back the little scoundrel was out in the public road and going on about his business, being now a hundred yards away. I let him go.

The bulldog went on up the road a mile and entered a yard where two hounds were kept. He began a fight with them and was driven off by their owner. A half mile beyond he fought a shepherd in another farm yard.

A few weeks afterward the two hounds sickened and died in spite of all the owner could do for them. The shepherd went off and laid down on a strawstack in a field, refused to remain at the house, and presently died. Three of my dogs went mad, one died and two had to be killed. The little bulldog I never heard of again.

Right then and there and for all time thereafter I made up my mind that I'd never place a set trigger on a rifle to be used for dangerous game—neither a set trigger nor a telescope sight, nor should the rifle be a single shot. I have not altered this conviction in the years since. With dangerous game, game which will charge, the set trigger is out of place. The telescope is out of place, the single shot is the wrong gun. Rifles for charging beasts should be either double barrel or repeaters, trigger pulls should not be under three pounds, sights for any man accustomed to wing shooting should be open. With a lion charging me I'll just be dinged-danged if I'd want to search for him through any peep sight however open or large the aperture.

Some More Old-Time Machine Guns

By Henry Walter Fry

CAPTAIN CROSSMAN'S amusing article in "The American Rifleman" on that two-hundred-year-old quick firer, or early Eighteenth Century pom-pom, reminded me of some rather primitive forms of machine guns to be seen in the Rotunda Museum of Artillery on Woolwich Common, England. The oldest one is very nearly a hundred years old, not such a venerable relic as the one described by Captain Crossman, but for a machine gun of a fairly respectable antiquity. It is thus described in the Museum catalogue. "Breech-loading machine of 31 rifled barrels, each .75 caliber, 44 inches long, with 11 grooves of a twist of one turn in 30 inches. There are brass chambers adjusted in a frame to fit the barrels, the whole being discharged at once by a single cap. There is a machine for charging the chambers. This machine has been in the department since 1830."

The other gun is a much more elaborate affair and was made about the time of the Crimean War in 1854, but does not seem ever to have been taken and used on active service. It consists of 24 twelve-chambered muzzle-loading revolving rifles, set in two horizontal rows, twelve rifles in each row. From what I can remember of it, I believe the caliber was about .44, but the catalogue doesn't say. By the turning of a crank handle every one of the twenty-four rifles was cocked, the cylinder revolved one-twelfth of a turn and then all were fired together in a volley. This could be continued till every one of the twelve chambers of each rifle had been discharged and the whole supply of 288 shots expended in the direction of the enemy. It was an ingeniously constructed machine, and no doubt a formidable one when loaded, but the loading of it must have been a fearsome business. It would have been bad enough had it been made for metallic cartridges, but they were not made for anything larger than very small rifles at that time, and it was just about that period that British military wiseacres issued their dictum that "the cartridge for a military arm must not contain its own means of ignition," that is, the percussion cap must be separate from the cartridge. Well, time has shown us how much the wisdom of those wiseacres was worth, just as it has done to the pronouncement of a high authority in the British gunmaking world, who, in 1858, wrote to the effect that for general military purposes the muzzle-loading smooth-bore musket "would be used for centuries to come." It's something less than one century since that was written, and modern armies don't use the smooth-bore musket to any great extent. But to get back to our machine gun. Every one of those 288 chambers had to be loaded at the muzzle with powder, the bullet rammed home and a cap placed on the nipple. Why, it must have taken a man anything from half an hour to an hour to get that gun completely reloaded. An ordinary smooth-bore field-piece

could be reloaded in one hundredth of the time, and double-shotted with canister would be quite as efficient as a lethal instrument.

Another machine gun, now obsolete, but of improved design, in the Museum, is the French Montigny, or mitrailleuse, of which great things were expected at the beginning of the war of 1870 with Prussia. It consisted of a cluster of twenty-five barrels of about .45 caliber and was loaded by means of a perforated steel plate holding twenty-five cartridges, which was dropped into the breech, which was closed and all the barrels fired at once by the movement of a lever. The mitrailleuse did not fulfil the hopes of its users, being more than outclassed in actual fighting by the Prussian Krupp breechloading field ar-

tillery, a battery of which, going into action once against a battery of mitrailleuses, wiped four of them clean out with four salvos of percussion shell.

On Woolwich Common may still be seen the immense thirty-six inch mortar which was also made, but never used about the time of the Crimean War. Many of its huge bombs are placed as ornaments at various points on the Common. Though for range and destructive effect it will not bear comparison with the mortars used by the Germans for the destruction of the Belgian forts, yet the bursting of a three-foot shell, though loaded with only black powder, would have caused considerable commotion in its immediate vicinity.

The idea that square bullets might be used against Turks and other infidels dates from the time of the crossbow, when the church authorities forbade the use of square-headed bolts or quarrels against Christians, but allowed them against Turks or Saracens.

New Target Designed

By Stephen Trask

THE increased accuracy of .22 caliber rifle work as demonstrated at Camp Perry has led to the adoption for next year of a new 50-yard outdoor target.

At Camp Perry the grouping at the short range was so close that the Statistical Office early in the competitions found it impossible to credit many of the shooters with the specified number of shots, so far as the evidence on the target was concerned. This necessitated the introduction of two 50-yard targets instead of one for each string, five shots being fired on each bull, but even this expedient did not entirely eliminate the difficulty. It was therefore proposed that for future competitions a 50-yard small-bore target be designed along the lines of the N. R. A. Gallery target, which contains five bull's-eyes. A tentative design of this target was submitted to the Match Committee. This design calls for a target, the outside dimensions of which will be the same as the present 100-yard target. Four bull's-eye will be grouped about a center bull, the nine and ten-inch rings to be without numbers, and the shooter to fire two shots on each bull. Such a target it is believed would facilitate the scoring and handling of the matches. While the grouping was very close on the 100-yard target, an increase in accuracy has not reached the point at this distance where scoring has become impossible. It is therefore thought that for the present, at least, the 100-yard target which is now being used will fill the bill.

Unquestionably, the small bore shooter has always been more of a fiend for super-close grouping than his .30 caliber brother, and this year at Camp Perry, in connection with every shooter's efforts to send their bullet through the same hole, an old custom, was revived. This has to do with the time-honored custom of firing "warming" shots, a practice which was prevalent among the mili-

tary shots a generation ago there being many shooters who still recall the pit at Sea Girt at which each shooter would invariably stop on his way to the firing line to foul his rifle barrel. Most of the small-bore shooters at Camp Perry were insistent that this be permitted and to a great extent the firing of "warming" shots was practiced this year, it being generally conceded that a .22 caliber rifle will not perform up to standard until its bore has been fouled to a reasonable extent.

Rifles and Moose

(Concluded from page 2)

your shots. Most of the big bores will go right through a moose, leaving a blood trail to follow even if they fail to stop him outright.

If I could just have one rifle for big game it would be by all means a sporting Springfield .30-06, or an 1895 Winchester, for you have a great variety of cartridges and under most conditions it is heavy enough for any American game. I am going to order a .400 Whelan for moose and Kadiak bear exclusively.

The 110-grain Remington High Speed cartridges stuck badly in the Winchester due to its looser chamber, the primers all bulged and one cartridge came apart in the Springfield, leaving the bullet in the barrel. They stuck slightly in the Springfield but not badly. We tried cartridges from three different boxes with the same results.

I hope this badly written story of a gun crank's moose hunt will help some of you to have a successful moose hunt, and will not bore you. From now on I will confine my moose hunting to October and early November, when you can still hunt moose and see your game clearly.

The Ammunition Board

(Continued from page 4)

Department has approved of a new stock for the Infantry arm, if funds are at the time available, and it is practicable, the Ordnance Department recommend the manufacture of pistol grip stocks of approved dimension for the National Match rifles of 1924. Upon this question ten of the board members voted affirmatively and one in the negative and the compromise, such as it was, was adopted.

This left the way open for the appearance of pistol grip stocks at the 1924 matches, provided the War Department approved of the Infantry and Cavalry Board findings, which the Ammunition Board was informed were ready for submittal and would probably be passed through in the course of a few weeks. The discussion of this question, however—especially a disagreement among several of the authorities as to what constituted the proper dimensions for the stock—later it is learned on good authority has caused those officers concerned in the pistol grip stock inquiry to feel doubtful as to whether further experiments should not be made before any definite recommendations are handed in. They have therefore decided to withhold their recommendations until such a time as the dimensions can be more fully gone into and these findings backed up by the results of actual use of the new type of stock by at least one unit in each branch of the service, including the Coast Artillery. This course of action will naturally consume many months and so there is little hope that the National Match rifles for next year will be equipped with a pistol grip stock.

Discussion of the question of general specification for the new Match rifles failed to develop any radical change from those in effect last year, except that it was pointed out to the board that in this year's rifles the workings of the magazine follower might have been considerably improved and the board recommended that especial attention be given to the finishing of this part of the mechanism. The general specifications for the National Match pistols also came up for discussion and it was announced that there had been ordered 400 specially selected Colt pistols, which will in all likelihood be issued to teams competing in next year's National Pistol Match. In the manufacture of these pistols especial attention has been given to producing smoothly-working and accurate weapons. The spring housing on these new handguns has been knurled, the trigger has been cut back to allow more freedom in the trigger guard, and the tang grip has been slightly remodeled to make it fit better in the shooter's hand. These pistols will be equipped with specially selected barrels, and possibly with wider sights than usual.

Commander Osburn brought before the board a question which is of considerable importance to the men who are shooting the free rifle. With accuracy in every way equal to that evidenced in special hand-made foreign arms the Springfield rifle, when used in the 300 meter game, is unquestionably handicapped by a lock time, which is very materially slower than that of rifles of the continental type. Commander Osborn pointed out that a study of lock time in relation to the Springfield mechanism might result in important improvements, which would provide our International riflemen with weapons which would be the equal, if not the superior, of any made abroad. He suggested that as the Aberdeen Proving Ground is equipped to make complete reports upon matters of this sort that the officers there be required to investigate the question of lock time, separating the subject into its component parts and definitely determining the factors which contribute to the slowness of bolt operation.

Major McFarland said that the question of lock time was an old subject at Springfield but that no systematic study of it had ever been made. The board was advised that the officers at Aberdeen would be glad to look into this question and arrangements were made for this investigation.

The entire afternoon session of the board was devoted to the consideration of questions relating to ammunition and while the specifications for the 1924 National Match ball cartridges were disposed of without hitch or difficulty, some collateral questions—among them that old, yet ever new controversy, group diameter vs. mean radius as a standard for target measurement—enlivened the considerations of the board.

The subject of Match ammunition this year covered a wide field: what Frankford Arsenal would be required to produce for the 1924 National Matches; what types were desired for the International 300 meter shooting and what types would be best suited for the Olympic Matches, which this year introduce the additional ranges of 400, 600, and 800 meters.

When the question of general specifications for National Match ammunition was called up, Colonel Stodter stated to the board that the ammunition used for the 1923 Matches was very satisfactory, indeed, and that he had heard nothing but praise for it from the shooters at Camp Perry. He said further that he had heard of no changes which might be contemplated in ammunition specifications by the Ordnance Department. Colonel Horney, of Frankford Arsenal, assured the board that the Arsenal had no changes to suggest and the general specifications were disposed of by adopting the ones which governed the manufacture of ammunition last year.

What developed into a long and exhaustive discussion upon methods of group measurement was begun when Major Casey advised the board to abandon the Mann barrel type of rest and return to the use of a service rifle in machine rest for firing the groups by which the National Match ammunition would be tested. Major Casey has been heard before by previous ammunition boards on this question but he returned to the fight this year in fine form.

"It does not follow," Major Casey said, "that ammunition which functions well in a heavy Mann barrel will function equally as well in a service rifle. There has been some criticism of the Mann barrel as a testing apparatus on the ground that the results are dependent largely upon the skill of the man operating the rest. This will continue until we go back to the service barrel, which in turn may lead to the improvement of the older type of machine rest."

Major Wilhelm replied to Major Casey that it is very difficult to properly clamp a rifle in machine rest, and Colonel Horney, of Frankford, declared that the use of the service barrel is a more expensive system than that in which the Mann barrel is used. "I would suggest," he said, "that we go ahead with the Mann barrels for another year, with the understanding that the Ordnance Department will vigorously try to improve the machine rest."

It was suggested that the Frankford type of rest in which the rifle is centered in rings might be a good system to follow, but the board was informed that it is quite as difficult to center the rifle in these rings as it is to properly clamp it in a rest.

Major Casey at this point declared that the results obtained by the Mann barrel firing, while accurate, were not applicable as results which might be expected from service rifle firing. Major Hatcher was in favor of continuing the use of the heavy barrels and declared that in the present type of machine rest it is impossible to know whether you

have good ammunition or merely good luck. To this comment Major Casey replied that with heavy barrels the bullet may be delivered at the muzzle with no whip, but in a rifle barrel this same ammunition may be delivered under conditions that would give no accuracy. He cited the case of Western ammunition of a few years ago that shot better in the service rifle barrel than it did in the Mann barrel. Major Wilhelm suggested that check firings be made with the machine rest after the tests in the Mann barrels.

Major Casey did not believe that the development of a machine rest for the Springfield rifle would be as difficult a task as past experience seems to have indicated. He told the board that Harry Pope claims that the construction of a machine rest for the Springfield is very simple and that he has a design which can be used with any rifle, and wherein the rifle has three points of rest, but is permitted to jump with the recoil. Major Wilhelm replied that there were six types of machine rest at Aberdeen but that none of them had proved satisfactory. The board was then informed that at Springfield they have recently been using a machine rest system wherein only the receiver is clamped and where the butt and stock of the rifle are cut off forward of the upper guard screws.

General Ruggles then asked Jarvis Williams, of the Remington Company, what his company's experience had been. He replied that the Remington Company has confidence in the Mann barrel, and that its experts do not believe that the Frankford Arsenal rest gives reliable results. To illustrate this, he said that assuming that the best accuracy from a given batch of ammunition in a Mann barrel gives a mean radius of 4.5 inches, with the same ammunition in a service rifle clamped in a Frankford rest, no better than 6.5 inches might be expected. R. F. Riggs, of the Western Cartridge Company, was then questioned and said that the only reason why his company favored the Frankford Arsenal rest is that they use it for testing with the receiver only clamped as in the Springfield style for the reason that they were not sure that the Mann barrel results were a true indication of what the riflemen could expect.

The concensus of opinion among the board was against abandoning the Mann barrels, and the motion provided that the testing be carried on as it was last year, was carried with the condition that the Ordnance Department be asked to look into the question of developing a machine rest which would give accurate results when the service rifle was used. This motion was carried and the board decided that the National Match ammunition this year would be tested at two ranges—600 yards and 1,000 yards—twice as many targets being fired at 1,000 yards as at 600.

When General Ruggles told the board that the next matter to be disposed of would be the method to be used in determining the winning ammunition and of measuring the test targets, Major Casey attacked the mean radius system as possessing serious faults.

"Until about 1920 ammunition tests were decided by the mean radius system," he said. "At that time the mean error was constituted the board's measure of accuracy. After that tests were conducted under the mean radius system again. I believe that the mean radius system is very likely not to properly penalize the wild shot. In testing the International ammunition last year, it was decided to use the mean of the extreme verticals and extreme horizontals. This system occupied less time, was more simple in operation, and I am convinced was a better measure of accuracy than the mean radius system. In fact, I would personally judge ammunition by the extreme vertical deviation alone but I believe a satisfactory measure of accuracy could be obtained by giving full value for extreme ver-

tical deviation and one-half value for horizontal deviation and taking the mean of these two figures. Mean radius does not mean anything to the rifleman. It is more or less of an arbitrary standard and does not suggest to him the possibilities of his ammunition."

Commander Osburn, while favoring group diameter alone as a standard of measurement, suggested an average of the mean radius and the group diameter with equal value to each, while Colonel Horney expressed himself as favoring groups diameters alone as a standard of measurement. Major Wilhelm urged that if either group diameters or a mean of the extreme verticals and extreme horizontals were adopted that mean radii be also taken so as to provide a basis of comparison with the result of previous ammunition tests.

During this discussion none of the ammunition company representatives who were not directly concerned with the testing of National Match ammunition expressed themselves as favoring any method of measurement, a factor which was to become important in the later deliberations of the board. At the close of this discussion Major Casey made a motion that the mean of the extreme horizontal and extreme vertical be the basis upon which the winner of the 1924 National Match ammunition test would be decided and the motion was carried.

The number of types of ammunition which will be considered at the National Match test were fixed by a motion providing that for the National Match ammunition tests of 1924 there shall be submitted by Frankford Arsenal the National Match ammunition of 1923 and that Frankford Arsenal be authorized to submit not to exceed two new types of ball cartridges.

On behalf of the reloading clan, Colonel Stodder presented to the board a suggestion that the forthcoming National Match ammunition be made with uncrimped primers. He said that the many civilians who reload find the extraction of crimped primers extremely difficult. None of the board members objected to this proposal and it was so ordered.

Consideration of pistol ammunition requirements for 1924 called from Major Fulton of the Coast Artillery the statement that, while the 1923 pistol cartridges were accurate in the extreme, misfires frequently occurred at Camp Perry. This, Colonel Horney admitted was true. "The primers used in 1923, and the pistols were not as well adapted to one another as they might have been," he said, "but instead of making any change in the ammunition specifications—to make the priming mixture more sensitive might be dangerous—I would suggest that getting a heavier blow from the pistol striker be tried. If this fails, then the primers can be changed." Colonel Horney said that he had brought back about 80 misfires from the matches for examination.

The general specifications were not changed, and the board decided to pick the match ammunition upon the mean of the extreme verticals and extreme horizontals. There was some talk of using Mann barrels for this test but it was pointed out that pistol ammunition would not be subject to the same variations as rifle ammunition and this was not done. Frankford Arsenal was authorized to submit three types of pistol ammunition, one type required being the 1923 lot.

International Match ammunition proved to be a fertile subject and before it was finally been disposed of a bomb was thrown under the system of target measurement as adopted for the National Match test, and the entire procedure reversed.

Major L. W. T. Waller, U. S. M. C., who has been named Captain of the United States International Rifle Team for 1924, told his associates on the Ammunition Board that this year the United States Team would not only

shoot at 300 meters in the Free Rifle Matches, but at 400, 600 and 800 meters in the Olympic Matches as well.

Asked concerning the number of types of ammunition which, in his opinion, would be needed to meet the requirements of all international shooting this year, Jarvis Williams, of the Remington Company, said: "It is possible to produce ammunition tested at 1,000 yards which would give satisfactory accuracy when used at the shorter international ranges. The reverse of this would not necessarily be true. On the other hand, we believe it possible to produce a distinct type of ammunition specifically for 300 meters which would give even better results. Therefore it would seem to rest with the captain of the team to decide whether he desires that degree of increase in accuracy.

In reply to this, Major Waller suggested that the manufacturers might produce two types—one for 300 and 400 meters and another for 600, and 800 meters and 900 and 1,000 yards; and General Ruggles advised the manufacturers' representatives that while this might be authorized, any company was at liberty to submit one type for both distances. On this question the board decided to hold one test at 300 meters and one at 1,000 yards, with 40 targets fired at the long range and 20 fired at the short range on two separate days, using the Mann barrels for the firings. This will leave only the 400 meter distance in any way in doubt.

When the Ammunition Board undertook to determine the basis which would be used in selecting the winning International Match load, the ammunition men, who had not been heard on the question of group measurement during the National Match ammunition discussions, had their innings.

Jarvis Williams, of the Remington Company, started the discussion by stating that his company was strongly in favor of measuring by the mean radius system. He said that in checking 300 meter targets last year, Remington had agreed to a different system because very small groups were anticipated.

Major Wilhelm declared that the rifleman was not so much concerned with the average error as with the maximum error, since that is the one which throws him off the most. This statement provoked a discussion dealing with the psychology of the shooter in relation to ammunition test figures, and at the conclusion of this, Williams was asked whether he thought that either method—that based upon the mean of extremes or that dealing with mean radii—would not result in the selection of the best ammunition.

"Both systems might conceivably have the same results," Williams replied, "but not necessarily so; the board will no doubt recall that the figures in some tests have been so close that they had to be carried out to the fourth decimal." Reference to figures of previous tests at this point demonstrated that the 1922 test would not have been altered had the basis of measurement been that of mean error. In the 1921 tests, however, a difference of system would have resulted in some changes in the standing of competitors. In using the mean radius system, Williams agreed that the full value of all ten shots was given.

At this point two motions were put before the board. The first, by Commander Osburn, provided that in selecting the 1924 International Match ammunition, that equal value be given group diameter (extreme radius) and mean radius. The second, by Major Wright, provided that the basis of measurement be mean radius, but that figures for the Extreme Verticals, Extreme Horizontals, and Group Diameters be recorded for the information of the board.

Representatives of the ammunition companies and of Frankford Arsenal expressed

themselves as favoring the second motion. The first motion was lost, on vote of 7 nays and 4 ayes. The second was carried unanimously.

Further discussion of International Test matters led to decisions by the board to abandon the movable screen system used last year as a check on the number of shots in the groups. Each competitor is authorized to enter not more than two types of International Match ammunition and two types of Palma.

When these details had been disposed of, the board members realized that as matters stood, they had adopted two radically different systems of target measurement, the National Match lots to be tested by a mean of the extreme Horizontals and extreme Verticals while the International lots were to be tested by mean radius. General Ruggles therefore moved that the earlier action of the board be set aside and that the system approved for the measurement of the International targets be substituted. This motion carried.

The Springfield Bolt

(Concluded from page 7)

to push the two lugs off a bolt is pretty much a song without words unless it is connected up with what actual push the explosion places on the said bolt-head and lugs.

Inasmuch as our crude way of taking chamber pressures indicates that the service charge exerts about 50,000 lbs. per square inch, then if the inside of the rear end of the case had an area of one square inch, the bolt would get a thrust of 50,000 lbs. particularly if you were one of these unfortunate grease addicts. And if you fired just about one shot out of this rifle, the chances are that you'd get your brains knocked out—if any.

However, as this would require a case of about 1½ inches outside diameter, which is a little larger than the present service case as you'll note if you drag out the yardstick, we still have a little margin to play around in.

The maximum thrust on the Springfield bolt, taking the diameter of the rear end of the case as around .428-inch inside and the area as about .144-inch, would be about 7,000 lbs. And 7,000 goes into 31,000 nearly four and a half times, pretty fair margin of strength. All of which would indicate that so far as lug strength is concerned we can at least take a chance like the deacon when the lady fell part way through the ceiling of the church and who allowed that he guessed he'd risk one eye.

There is, of course, always the difference that the slow pressure of the static weight measuring machine cannot be so comfortably compared to the dynamic force of the cartridge case moving slightly back under explosion thrust. The measure of a dead weight cannot always be compared to theoretical measure of a blow, but in any event present systems of measurement and the experience of years both go to prove that, as a rule, both lugs are pretty faithful to their trust so far as our rifles is concerned.

THE NRA NEWS

Conducted By C. B. Lister

THE AMERICAN RIFLEMAN is the official magazine of the National Rifle Association. It is the medium through which the policies and plans of the Association are announced to the shooters of the nation. In order to properly serve its function as the "House Organ" of the shooting fraternity, it is necessary, however, that the magazine be more than the bulletin board for Headquarters activities. It must act as a clearing house for worth-while ideas developed by the various affiliated individuals and organizations who constitute the N. R. A.

With this end in view, "N. R. A. News" has been added to the paper. In this department it will be possible to talk shop for the benefit of those who are interested, without in any way detracting from the technical and narrative articles which are of interest to the shooters who have not yet entered the "dyed-in-the-wool" organized target shooting class.

The N. R. A. News is very largely in the hands of the rifle club Secretaries and Executive Officers, and the individual members of the Association. Here will be published the report of club activities which have salient features that will be of assistance to other clubs. Matters of a controversial nature will be excluded. The N. R. A. News is a service department, and not a section for the settling of personal or sectional disputes.

Active clubs are always experimenting with plans for financing; plans for obtaining club-rooms or outdoor ranges; plans for adding new members to their rolls; plans for enlisting local National Guard or Regular Army units; plans for interesting the police, trying out novelty matches, etc. Any such items which carry new ideas or unusually successful application of old ideas, and which will, as a result, prove of value to rifle shooting organizations all over the country, will be printed either in the form of reports as submitted from the Club Secretary or as articles re-written for the Department from data submitted by the club.

It should be borne in mind that it will be out of the question to print detailed scores of every rifle club competition. Such a practice would result in long columns of figures which would be of no value in increasing the general interest in rifle shooting or in assisting hard-pressed Executive Officers in the planning of new forms of competitions. It is suggested, however, that club secretaries submit reports of their shoots, as quite frequently a match which is ordinary enough in one club may contain a feature of unusual interest to the Association as a whole or to other clubs who have not tried out the plan. Undoubtedly, many reports will not be printed, but this should not discourage the sending in of further reports. The Association is keenly interested in what every one of its affiliated clubs is doing, and whether or not the reports of the shoot are printed in these columns, secretaries may rest assured that they will be read with interest at Headquarters and filed with the records of the club. Even a casual glance through the club files would cause many club members to go home and ask the Secretary if he had lost the address of the N. R. A.

It is to be hoped that the N. R. A. News will take its place beside the "Dope Bag" and the Director of Civilian Marksmanship's section as one of the essential elements in the make-up of "The American Rifleman." This end will be accomplished easily enough with the co-operation of all club secretaries and individual members. It cannot be accomplished on the initiative of the N. R. A. alone.

Reports of Club Members' Matches for 1923 received so far this year indicate considerable activity among clubs not generally heard from in connection with the regularly programmed events. A great many clubs who participate in all the team matches apparently overlook the privilege which they have of firing the match for the individual champion.

TWO-MAN TEAM WINNERS AT PERRY



F. I. King, California, and R. H. Betts, Frankford Arsenal, winners of the Hercules Trophy in the Small-bore Two-man Team Match, one of the most popular of the small-bore events. Team score 681 x 600.

ship of the club. The N. R. A. Individual Club Championship medals are available for award for competition with either the service rifle or small-bore. Reports should be submitted before the end of the calendar year. Medals will be mailed club secretaries, or direct to the winners, within forty-eight hours after report is received.

There was an epidemic of life memberships at Camp Perry. The life member is saved the trouble of wondering if his dues are paid, and is a man of affairs in the Association, having a vote at the election of Directors and the privilege of occupying a Director's chair or being elected to the Executive Committee. When you reaffiliate for 1924, how about making it a life membership?

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Last year the Gallery Qualification Course was re-instituted as a part of the all-year-round shooting calendar. This course serves several purposes. In the first place, it gives the rifleman in outlying sections who have not had an opportunity to witness the average rifle club shooter in action an opportunity to get a line on himself. The rifleman who can qualify over this course as 'expert' need have no hesitation in entering any gallery competition with the feeling that he has an even chance with the best of them. It gives him a definite National rating and provides an attractive decoration, whether the qualification attained be that of marksman, sharpshooter, or expert. In the second case, the qualification course provides the club Executive Committee with an automatic ranking device for the handicapping of club members. In the third place, it provides a competition which may be arranged at any time during the year when things slow up a bit. In the fourth place, it gives the club an opportunity to attract newcomers, as any man who has fired a few times is desirous of qualifying, and the qualification for marksmen has been set at a figure that it will not be impossible of accomplishment by the man who has not been in the game a very long time. Having qualified as marksman, it is a sure thing that the Tyro will promptly take hold with renewed energy in an effort to attain the higher grade. The complete conditions for the Qualification Courses follow:

The N. R. A. Gallery Qualification Courses.

Eligibility.—Open to any life, annual, or junior member of the National Rifle Association of America.

Distance.—Fifty or 75 feet.

Conditions.—The course will consist of three stages. A stage will consist of two strings slow fire, each of two sighting shots and 10 shots for record and two strings of rapid fire, each of five shots. Stages will be fired in the following order: First stage—One string prone, one sitting, two strings rapid fire sitting. Second stage—One string prone, one kneeling, two strings rapid fire kneeling. Third stage—One string prone, one standing, two strings rapid fire prone.

Entrance fee.—\$1.

Qualification score.—To be designated an Expert Gallery Rifleman, an aggregate score of 725 will be required. To be designated as Gallery Sharpshooter, an aggregate score of 700 will be required. To be designated as Gallery Marksman, an aggregate score of 675 will be required.

Decorations.—The appropriate decoration in bronze as pictured on page 21 will be mailed immediately upon receipt of fired targets properly signed by the N. R. A. Judge and witnesses.

Entries.—Applications for firing the gallery qualifications course will be received at any time during the calendar year.

When fired.—The course may be fired any time within the calendar year, provided that targets must be fired and returned to Washington within 90 days after entry is made.

Requalification.—Expert gallery riflemen may fire for qualification each year, and having qualified three years, not necessarily in succession, will be awarded a silver decoration.

Reaffiliations will be received from now on for 1924. Start your Christmas shopping early and give the people at N. R. A. Headquarters a chance to get off to do theirs by getting your reaffiliation in without being formally asked to do so.

If you have no place to shoot in the gallery, try interesting your local National Guard Company in the military section of the program. When they find that there is some-

thing worth while to shoot for in the gallery, they will bring theirs up to date and give you the chance you have been looking for to shoot during the winter.

Two things worthy of the attention and serious consideration of every rifleman occurred on the rifle range at Camp Meade, Maryland, Saturday afternoon, October 18. The first thing was the firing of a match between ten-man teams representing the Maryland State Rifle Association and the Regulars of the Third Corps Area. The second thing was that this match was fired for a trophy presented by one of the leading newspapers in that area, "The Baltimore News." The trophy, a splendid silver cup mounted on a silver banded ebony base, was presented by this newspaper for annual competition among rifle teams in the Third Corps Area.

The crying need of the rifle shooting game has been closer co-operation between the armed forces and the civilian riflemen, and more interest in the sport on the part of the newspapers. The match at Camp Meade indicated plainly that both of these greatly to be desired ends can be accomplished if the civilian riflemen approach the matter intelligently and follow it through aggressively. No finer co-operation could have been asked for than that extended the civilian riflemen by the officers and men at Camp Meade, and the seriousness with which the Regulars are attacking the rifle shooting problem was demonstrated by the fact that the men picked to represent the Third Corps Area were chosen from among the medal winners in the Third Corps Area competition.

Arrangements for the donation of the cup and holding of the initial match were made by Mr. C. O. Briggeman, Secretary of the Maryland State Rifle Association. Unfortunately, matters did not come to a head early enough in the season to permit advance publicity, which would have enabled teams from other civilian organizations in the Third Corps Area to compete. There is every reason to believe, however, that "The Baltimore News" Trophy will form the nucleus around which can be built an annual shooting tournament to decide team and individual championships in the Third Corps Area that will serve not only to stimulate interest in the game among all the regular troops and civilians in the Third Corps Area, but will automatically cement bonds of friendship between the men in uniform and those out of uniform, which will be of lasting benefit to both.

The conditions of the match called for ten shots slow fire prone at three hundred, five hundred, and six hundred yards, and ten shots rapid fire sitting from standing at two hundred yards, rapid fire on the "D" target. The range at Camp Meade has ample accommodations for a large number of shooters, having two hundred targets echelon with a common firing line. The targets are at all ranges from two hundred to a thousand yards. It is unfortunate, however, that in order to obtain a proper backstop, it was necessary to lay out the range with a line of fire almost due west, and as a result, shooting in the afternoon is an extremely difficult proposition, particularly at this season of the year when the sun is down behind the targets by five o'clock. Realizing this, it was decided to fire the six hundred-yard stage first, while the light was still good. At this stage, the civilians got away with a two-point lead, turning in a team total of 412 against the soldiers' 410. At five hundred yards the civilians began to run into trouble, and turned in a total score of 434, as compared with 447 for the Third Corps Area, giving the latter a net lead of eleven points. The three-hundred-yard slow fire stage, fired prone on the "A" target, was expected to result in no change of position, but the civilians

New Medals for N. R. A. Marksmen



These are the designs for the new N. R. A. sm alt-bore medals which will be awarded in the qualification shooting course during the coming season.

continued their hard-sledding, losing two shots completely, and throwing another shot on a Third Corps Area target, with the result that the total civilian score for this stage was but 427, while the Army ran up 446, the gross result being thirty points lead for the soldiers. That apparently sewed the match up in a sack for the team of Cavalrymen, Engineers, and Infantrymen, but in order to make assurance doubly sure they piled up a further gain of thirty-two points at the rapid fire stage, the soldiers having 463, civilians 431. The aggregate for the four ranges was 1766 for the Third Corps Area and 1704 for the Maryland State Rifle Association.

Immediately upon conclusion of the match, "The Baltimore News" Trophy was presented to the Third Corps Area team by Lieut. Col. Frederick S. Young, Twelfth Infantry, who acted as Executive Officer for the competition. At the same time he presented the awards to the ten medal winners in the Third Corps Area matches.

From the standpoint of the civilian riflemen, the match may not have been a glowing success insofar as taking back the trophy to Baltimore was concerned, but from the broader standpoint of both civilian and military riflemen, the competition was a success in every way, arousing keen interest among the soldiers at Camp Meade as well as the several carloads of civilians who came down with their teams from Baltimore. It indicated that the newspapers can be interested in the shooting game, and it showed that the civilians can gain a great deal in the way of assistance from the Army in the staging of competitions if they will co-operate with the men in uniform. Next year we may expect to hear a great deal more of "The Baltimore News" Trophy competition for the team championship of the Third Corps Area, and it is to be hoped that another trophy may be lined up before that time for the individual championship.

Every rifle club will receive *The American Rifleman* through the club secretary beginning with this issue. No more important announcement to the rifleman has ever appeared. Through the years since 1885, under various names, the magazine has firmly established its reputation as the most authoritative rifle and pistol publication in the world because of its absolutely unbiased and uncompromised position as the official publication of the National Rifle Association.

With the addition of "The N. R. A. News" to the fixtures, the magazine becomes more than the official publication of the Association. It is the House Organ of the N. R. A. as well. To properly fill this place, it must reach every club, every club must read it, every club must contribute the stories of its successes and failures. From failures more can frequently be learned than from successes. The magazine is being forwarded to the

clubs through the Secretary. He is the logical man to read it first—then the Executive Officer of course—but it is the Club's magazine and should be available at the range or club-room.

Competitors in the Gallery Rifle Matches this winter will face a new target. The familiar six bulls remain but in the center of the 10-ring appears a dotted X-circle. Matches this year which result in "possible" tie scores will be decided on the basis of the greatest number of X's. With the well-known difficulty of keeping all shots centered on the same point of impact as the shooter moves from bulls-eye to bulls-eye, the X-ring in the gallery target will place an ever greater premium on close holding and accurate centering of hits than does the V-ring in the military targets. It will come as no surprise if some enterprising individual, aided and abetted by the kind of rifle, ammunition, and sights now obtainable puts on a 10-shot "possible" on the X-ring, but all matches call for more than 10 shots and it is not anticipated that there will be any necessity to hold up the returns this year pending shoot-offs and re-shoot-offs.

In this issue of *The American Rifleman* starts an article pregnant with possibilities for rifle clubs who will digest the plans and principles outlined. "Rifle Shooting In Schools and Colleges" is one of the most important matters now facing the N. R. A. Few people are better prepared to discuss the subject than W. R. Stokes. Mr. Stokes has been closely affiliated with rifle shooting in the public schools and colleges since he took up the game. In characteristic manner he has studied it from all angles. He knows the students' attitude, having been himself an under-graduate shooter. He knows the attitude of the Faculty, having been Chief Instructor in Rifle Practice for the Washington, D. C., High Schools and George Washington University for some years. He understands the attitude of those organizations so closely allied and having so much bearing on modern school life—the Summer Camps, the Y. M. C. A., and the Community Service—having been Assistant and later Chief Instructor at one of the largest and most successful Boys' Camps in the United States for the past four years. Finally, he appreciates the viewpoint of the viewpoint of the Civilian Rifleman, as it was in that capacity that he won the titles which have gained him his present prestige in the eyes of American riflemen.

An appreciation of all these factors is essential to the promotion of rifle shooting in the educational institutions of the country. Without an understanding of the manner in which the student approaches the game, you cannot sustain his interest or enlist his co-operation. Without an appreciation of the viewpoint of the faculty, you will never succeed in having rifle shooting introduced into your schools.



Conducted By Col. C. E. Stodler

THE Ordnance Department has no more serviceable ammunition, caliber 7.62 mm. for the Russian rifle. There is a large quantity of this ammunition that has become unserviceable, giving a considerable percentage of misfires and hang fires. Some of this unserviceable ammunition would probably be suitable for breaking up and reloading with fresh primers and powder. It will be sold "as is" at \$4.00 a case with the understanding that the purchaser assumes all responsibility for its use.

There are no more Krag Carbines on hand and no more extra barrels for Krag rifles or carbines.

The price of Cosmic has been increased to 65 cents per quart can. This price includes parcel post charges. Cosmic is not a cleaning material but is a heavy gun grease which is used to prevent corrosion after the rifle or other firearm has been thoroughly cleaned. A quart of this grease will last the average rifleman several years.

This office frequently receives requests for the purchase of rifles or other supplies which the purchaser desires to have shipped immediately or specifies a date on which the supplies must reach him. Sometimes his request is not received until after the date specified by him or so near it that it would be impossible to deliver the supplies even if they were on hand in Washington.

There is no Ordnance Depot or Arsenal in Washington and supplies must usually be ordered from Arsenals which adds to the time necessary for delivery. The following supplies are usually on hand in Washington: National Match rifles, cal. .30, Model 1903, telescope sights Lyman No. 48 sights, .22 caliber rifles, including Springfield, Winchester 52, Savage and Stevens, spare parts for Springfield .22 cal. rifle, cosmic, cleaning patches, small-bore targets, score books, telephones and .22 caliber long rifle ammunition.

We are not equipped to fit sights or do repair work on rifles. Such work can usually be done at one of the Government arsenals, but the cost is rather high.

"Outdoor Life" for November published the statement that "The Government is now putting Springfield barrels on Krag actions and selling them for \$6 or \$7.50." This statement been fitted to Krag actions and there is no

is not correct. No Springfield barrels have intention of doing so. The Krag action is not strong enough to handle the cal. .30-06 cartridge, the cartridge will not work through the magazine and the extractor would not withdraw the cartridge case from the chamber without modification.

The Springfield barrel cal. .30-06 with front sight complete costs \$7.62, the cost of fitting to a Krag receiver would be about \$10.00 and to chamber it for the Krag cartridge would probably cost \$10.00 or more. By the time all this had been done the rifle would cost as much as the Springfield.

Purchasers should send in their orders at least four weeks and preferably six weeks in advance of the time the supplies are required. On account of the large volume of sales and the small clerical force of this office we are not always able to handle orders promptly and there is usually a further delay at the arsenal.

Riflemen frequently ask to have special work done at a Government Arsenal, such as making barrels of special dimensions, fitting Springfield barrels to various types of receivers, fitting Springfield stocks to other rifles, furnishing rifles with specified star gauge readings or special chambers.

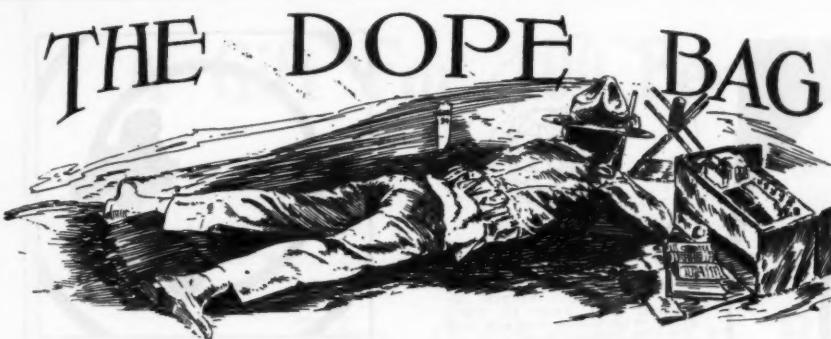
The Government Arsenals are equipped for the production in quantity of certain supplies which are manufactured according to a prescribed schedule of operations. To make any variation requires the making of special tools and considerable hand work which makes the cost excessive. There are several arms companies and gunsmiths who are equipped to do all kinds of special work at lower prices than the same work would cost if done at a Government Arsenal.

The following is the latest price list of parts for the U. S. Rifle, caliber .22, Model 1922:

Band, lower .....	.61
Barrel, assembly	8.00
Composed of:	
Barrel (stripped)	
Stud, fixed	
Pin, fixed, stud	
Bolt	3.29
Bushing, guard screw .....	.07
Catch, floor plate .....	.29
Ejector .....	.44
Extractor .....	.45
Follower, magazine .....	.78
Guard, trigger	3.25
Head, bolt	3.00

Head, firing pin .....	.21
Latch, bolt head .....	.16
Lock, bolt sleeve .....	.18
Lock, safety, assembly .....	.45
Composed of:	
Piece, safety lock thumb	
Plunger, safety lock	
Spindle, safety lock	
Spring, safety lock	
Magazine, assembly	2.43
Mainspring .....	.03
Pin, bolt head latch .....	.06
Pin, bolt sleeve lock .....	.02
Pin, firing, assembly .....	.81
Composed of:	
Piece, cocking	
Rod, firing pin	
Pin, fixed stud .....	.01
Pin, floor plate catch .....	.01
Pin, front sight .....	.01
Pin, lower band .....	.01
Pin, magazine follower thumb .....	.07
Pin, sear .....	.02
Pin, trigger .....	.02
Plate, butt .....	.67
Plate, floor .....	.86
Plunger, bolt head latch .....	.23
Plunger, ejector stop .....	.03
Plunger, safety lock .....	.03
Plunger, striker .....	.09
Receiver .....	.31
Screw, butt plate .....	.05
Screw, butt swivel .....	.02
Screw, ejector stop .....	.03
Screw, front sight .....	.02
Screw, guard front .....	.03
Screw, guard rear .....	.05
Sear .....	.02
Sight, front .....	.34
Sleeve, bolt assembly .....	.05
Composed of:	
Sleeve, bolt	
Lock, bolt sleeve	
Pin, bolt sleeve lock	
Spring, bolt sleeve lock	
Sleeve, firing pin .....	.03
Spindle, ejector stop .....	.06
Spindle, safety lock .....	.06
Spring, bolt head latch plunger .....	.01
Spring, ejector stop .....	.01
Spring, floor plate catch .....	.01
Spring, magazine .....	.12
Spring, magazine retaining .....	.26
Spring, safety lock .....	.01
Spring, sear .....	.02
Spring, striker plunger .....	.02
Stock, assembly	4.32
Composed of:	
Stock	
Bushing, guard screw	
Stop, ejector, assembly .....	.56
Composed of:	
Stop, ejector	
Plunger, ejector stop	
Screw, ejector stop	
Spring, ejector stop	
Spindle, ejector stop	
Striker, assembly .....	.75
Composed of:	
Striker	
Plunger, striker	
Spring, striker plunger*	
Stud, movable, assembly .....	.33
Composed of:	
Sight, front	
Pin, front sight	
Stud, movable	
Stud, fixed .....	.36
Swivel, butt assembly .....	.26
Composed of:	
Swivel, butt	
Pin, butt swivel	
Plate, butt swivel	
Swivel, lower band .....	.19
Trigger .....	.32

Purchasers should add a sufficient amount to cover parcel post charges.



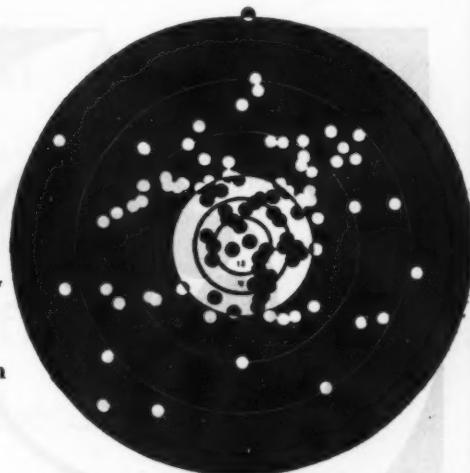
A free service to target, big game and field shots, [all] question being answered directly by mail.

Rifles and big game hunting: Maj. Townsend Whelen.

Pistols and Revolvers: Maj. J. S. Hatcher.

Shotgun and Field Shooting: Capt. Charles Askins.

Every care is used in collecting data for questions submitted, but no responsibility is assumed for any accidents which may occur.



What has been called "Harry Pope's best effort." A total of 917 points x 1,000 off-hand at 200 yards on the Standard American target, with Pope .33 caliber rifle and Stevens telescope. This score was shot under very adverse conditions of wind, rain and gathering darkness, yet the last five shots of the score were placed in the 10-ring which measured 3 and $\frac{36}{100}$ inches, and 2 of the five were in the 12-ring which measured less than an inch in diameter. Made April 9, 1897, at Lake Lookout Range, Springfield, Mass.

John W. Sidle—Scope Maker.

By Townsend Whelen

FROM his scrap-book of clippings and from memories which reach back a quarter of a century into the history of rifle shooting, V. R. Ormstead, of Montclair, N. J., has called up the subject of Sidle telescopes.

He refers to the fact that these glass sights were mentioned in a recent issue of "The American Rifleman," and says:

"Sidle's place of business was at 628 Race St., Phila., at the time I met you there, about 1900; you remember it overlooked one of the small squares so numerous in Philadelphia, and Sidle always trained his scopes out of the window at the buildings across the square, some 200 or 300 yards away to show his customers the power, definition and light gathering qualities. His 'snap shot' scope was of $\frac{1}{4}$ in. diameter, about 3-power and had a big field at 100 yards, this was the glass he worked on with the help of E. A. Leopold, of Norristown. This 'snap shot' scope was a very fine glass for hunting, as it was particularly clear and distinct, more like the Goerz $\frac{3}{4}$ power of today. It's a pity Sidle did not push this scope more, he could have made it very popular."

"In going over my scrap-book of years ago, I ran across some groups made in the old black powder days that put to shame the groups made with present-day H. V. rifles that are howled about as being so wonderful by the younger generation of shooters, but which look like "barn door" groups to me. You may publish these groups if you care to for the benefit of the younger shooters and let them see what was really done. Here is one of 120 on Standard American rest target made by the Rev. J. I. Mead at Walnut Hill Range, Mass., made with a muzzle-rest—not a machine-rest, mind you. Here is another made by H. L. Willard at the same range under the same conditions and please note that Willard made his own scope, too. Then there is a group made by E. A. Leopold in a machine-rest which is no better than the preceding two. Leopold's signature is attached to the group, which you'll note was shot in 1897 with a Pope .32 rifle."

Now we come to the treasure, the World's Record (so-called) but really the United States record made by A. D. Spencer, of Dunmore, Pa., in 1897, at 40 rods, with a 40 cal. Zischang barrel, Sidle telescope and shot with muzzle and elbow rest and I want to ask right here where is the H. V. rifle of today that will come any way near that accuracy at 40 rods (not yards)? It can't be did.

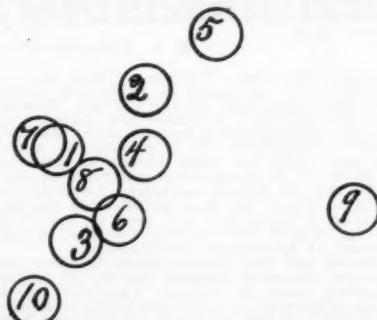
"In speaking of using shot-gun smokeless powder in rifles of high velocity, the writer has used it in all classes of rifles for many years, as the accompanying group will show, this was made July 4, 1903, twenty years ago, and is not shown for extremely close grouping as I was

sitting with back to a tree with my elbows rested on my knees. The rifle was a Winchester S. S. 32-40 and I used 20 grains bulk of Du Pont shot-gun powder behind a home-made bullet of 175 grains weight, cast 1-40; this would seem rather soft and if my recollection is good, I soon was using bullets of one to fifteen, or one to seventeen, of tin and lead.

Here, too, is an old circular of Schoyen & Peterson showing some groups made by C. W. Rowland with a George Schoyen barrel, wonderful work; he (Schoyen) made some most excellent barrels; he made a 32-40 for me that gave me the finest groups I ever shot at 200 yards with telescope and muzzle rest."

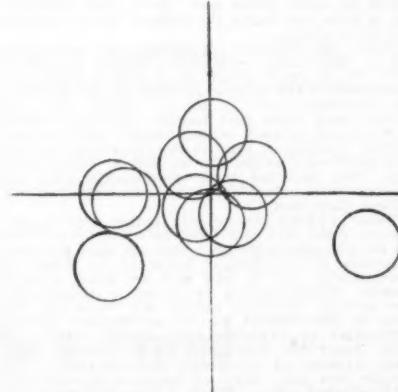
I was very glad to receive Mr. Olmstead's interesting letter. It brings back old times to hear the name of old John Sidle and his fine scopes, as well as the remarkable groups that the old rest shooters of 30 years ago used to get occasionally.

I knew Sidle well, and frequently visited his shop on Race Street. He made several excellent scopes for me, the last a 4-power Snapshot that I still have. His scopes were exel-



A group made by Leopold November 21, 1897, at 200 yards 32-40% Pope rifle from rest.

lently made for their day, but in those days we only had black powder. I fear that used on modern smokeless rifles of sharp recoil, the lenses on these Sidle scopes would eventually become loose in their cells. Also, the short eye relief (only about $1\frac{1}{2}$ inches in the snapshot), would endanger the eye if used on a modern high velocity rifle on account of the sharp re-



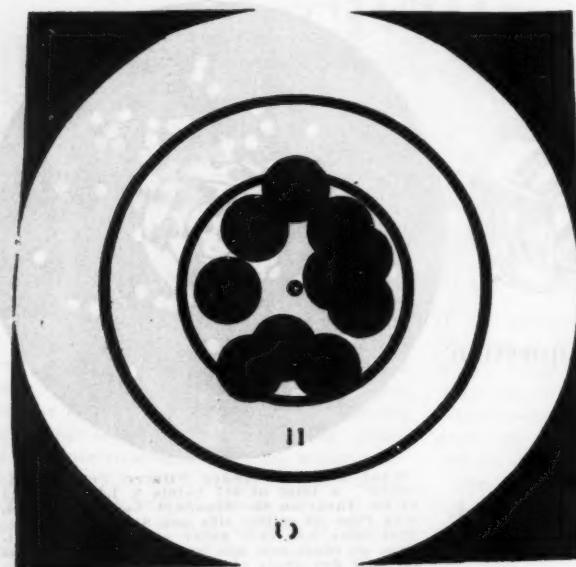
A world's record group made by A. D. Spencer on October 8, 1897, at 40 rods with Zischang 40 caliber barrel, and Sidle 'scope. Strong measurement $4\frac{1}{4}$ inches. Shooting done at Dunmore, Pa.



Ten successive shots by C. W. Rowland, of Boulder, Colo., with a Schoyen barrel and Peters on 'scope at 200 yards.

coil. For a hunting scope for any rifle up to .32-40 it would be hard to beat the Sidle Snapshot scope today.

My subscription to "Shooting and Fishing" started in 1898, and I have studied all the previous issues back to the very first issue of "The Rifle," so I am of course familiar with the results obtained by the old rest shooters of



A perfect score of 120 on the Standard American target made Nov. 11, 1903, by the Rev. L. T. Mead at Walnut Hill. This was shot from a rest at 200 yards with a .38-55 caliber rifle with Ballard action and Sidle telescope.

thirty or more years ago. It is very interesting to have you bring the subject up in the way you have done.

These old riflemen specialized on rest shooting, a thing that very few riflemen do today. Most of the rest shooting of today is merely incidental to the testing of rifles to obtain average accuracy and to adjust sights. The old timers used rifles and bullets absolutely accurately fitted to each other, usually false muzzle outfits. Moreover, they made their own bullets, and they were extremely skilled in bullet casting. They selected their components with the greatest care, often throwing out over half the bullets they cast.

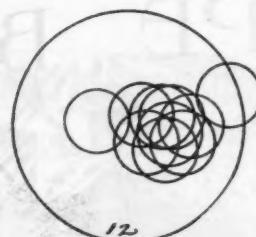
Today I think we get far better average accuracy than ever our experts used to get, but we do not specialize on a certain rifle and ammunition to the extent some of us used to. Particularly we do not get as good selected bullets. Bullet casting as an art is almost lost. Our present jacketed bullets are excellent, but even in this respect we are up against certain difficulties as explained in a recent edition of "The American Rifleman" under "Some Technical Aspects of Cartridge Manufacture." The groups you sent were all selected groups shot with selected rifles. While I know of only two or three groups shot with modern rifles that will at all compare with these, I do know of a number of selected modern rifles that for many successive groups have averaged under three inches at 200 yards, a thing it would make even a Pope rifle hump itself to do. Were we to specialize on rest shooting these days, as we did in the past, and begin to perfectly fit our bullets to our individual rifle, I feel sure we would every once in a while turn out some most remarkable groups just as they did in the past.

SOFT POINTS FOR THE 7.62

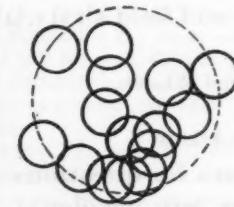
I AM having a little difficulty in procuring soft-point ammunition for my 7.62 mm. Russian Sporster and suppose that you would be in a position to inform me if this cartridge is being loaded with soft-point bullets at present by any American manufacturer; if so, by which one?

In your booklet "Cartridges and Loads for American Rifles" you give the maximum allowable breech pressure of the Winchester '86 using the .45-70 as 30,000 pounds. As I own and shoot a Springfield "Long Tom," this figure would not mean much to me. I am therefore requesting that you give me the maximum allowable breech pressure for the Springfield Model 1873, in "gun crank" condition.

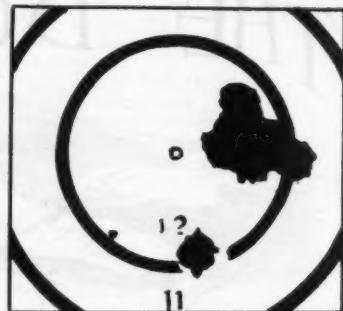
Of late I have had several arguments with a friend of mine regarding the 7 mm. Mauser. He has informed me most emphatically that it is too large for deer and bear such as we have out here and I am just as strong against his statement. I own, shoot and tinker with my Model 1893 Mauser, remodeled and intend to shoot deer this coming fall. What is your opinion of this cartridge? I have told him repeatedly of incidents where deer are wounded with such peashooters as the .22 Hi-power, .25-35 and .30-30.



10 consecutive shots, 200 yds., rest by H. L. Willard at Walnut Hill, June 22, 1895, .38-55 Winchester-Ballard and Willard scope.



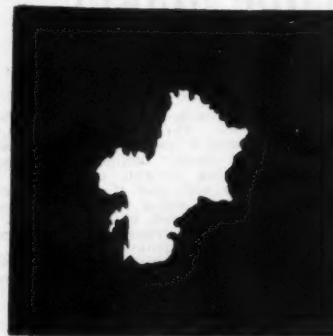
15 shots from machine rest with Pope 28-30-118 at 100 yards, made by G. N. Ritter.



Another of Rowland's 200-yard, 10-shot groups with his Schoyen-Peterson combination.

making splendid rifles for the 7 mm. cartridge. Even the old 7 mm. cartridge with 175-grain bullet, M. V. 2250 f. s. was an excellent killer on all American game. At one time the Lyman Gun Sight Corporation told me that of all the rifles they fitted their sights to, they got the best accuracy from the 7 mm. Mauser rifles. This was before the war, of course. I would be rather afraid to trust a 7 mm. German rifle of post war manufacture, however. I should not say that this cartridge was too large for black tail deer and black bear but rather that it was ideal for such game. Perhaps it is not quite as good for the larger game as the .30-06, except in the hands of men liable to flinch from recoil. By these latter is will, I think, be found better than the .30-06, as they will make fewer misses.

Editor's Note—Since the above was written, the U. S. Cartridge Company has produced an excellent soft point bullet for the Russian rifle.



10-shot group by C. W. Rowland, of Boulder, Colo., with Schoyen barrel and Peterson scope at 200 yards.

and get away to make food for cougars. The general belief now-a-days is to use as light a rifle as possible, and it seems to me that sportsmen must be getting "skinned" of the recoil of a rifle like old "Long Tom." For my part, after shooting a real rifle like the .406, the .45-70 and the .45-90, I feel ashamed to shoot game with such instruments of torture as the .22 H. P. and the .25-35.

M. S., Portland, Ore.

Answer (by Maj. Whelen): There are no cartridges with soft-point or expanding bullets at present being made for the 7.62 mm. Russian rifle. All cartridges available are loaded with the regular full jacketed pointed bullet, and are of war manufacture. It is possible to reload fired cases with the game bullets as used for the .30-06 U. S. Government cartridge or bullets for the .303 British cartridge. Du Pont No. 16 will be found the most satisfactory powder. The same primers that are used in the .30-06 cartridge will be found correct for the 7.62 mm. cartridge of Remington manufacture.

I should say that 30,000 pounds is about the maximum allowable pressure for the .45 caliber Springfield rifles or carbine. This will permit the use of all factory cartridges, black or smokeless powder, except the high velocity and high power cartridges. These latter should not be used in the .45 caliber Springfield.

The 7 mm. cartridge as recently developed will, I think soon prove the very best cartridge for all American big game except perhaps Alaskan brown bear. This new cartridge as made by the Western Cartridge Company has a M. V. of 3,000 f. s. in a .30-inch barrel. The open point Lubaloy bullet weighs 125 grains. The makers report accuracy up to 500 yards equal to the best match ammunition in the Springfield. Griffin and Howe, whose circular I inclose, are now

SHORTENING THE ROSS

COULD I shorten the barrel of a Ross .303 about two inches, making it 24 inches, without injuring its accuracy? How would this affect the range?

Could the pistol grip stock, .30 cal., be fitted to a Krag carbine (1898) without the aid of a gunsmith?

L. F. P., Camden, N. J.

Answer (by Maj. Whelen): The barrel of a Ross .303 rifle can readily be shortened to 24 inches without effecting it in any way except velocity. In shortening it from 28 inches down to as low as 22 inches you lose about 15 f. s. velocity for each inch you cut off. Under 22 inches velocity falls off faster.

The Model 1922, .22 cal. Springfield pistol grip stock cannot be fitted to a Krag Carbine, even by a gunsmith. The Springfield and Krag rifles are of entirely different design.

KRAG AMMUNITION IN THE ROSS

AM coming again for some information concerning some guns that I have and do not know much about. I have a Krag carbine and a Ross Model 1905 cal. .303 Army rifle and I happened to put some Ross cartridges in the Krag and was surprised to find that with a little pressure the bolt could be shoved home. I was afraid that the Krag might not stand the pressure that the Mark VII cartridge would produce and therefore did not think it would be very safe to try to shoot it without first asking your advice.

In view of this I took the powder out of a Ross cartridge and put it in a Ross case, and also using the Ross pointed bullet, and notice that it has very flat trajectory when shot in the Krag carbine with just as good accuracy. I had been planning on getting some lightweight hunting bullets for the Krag, but if it is safe to shoot the Ross bullet in the Krag I believe they would answer the purpose.

Would also like to know how much the Krag and Ross rifle will safely resist (meaning pressure).

A. W. W., Wirth, N. Dak.

Answer (by Maj. Whelen): Do not under any circumstances attempt to fire Krag cartridges in Ross rifles or vice versa. You will not only probably ruin your barrel, but there is also great danger that the cartridge case may give away, allowing gas to come to the rear, wrecking the rifle and perhaps seriously injuring you.

Do not attempt to interchange powders. A powder charge, for example, suitable for a Ross Palmer load would wreck the Krag if loaded in that rifle behind a 220-grain bullet. When you try to fool with explosives and weapons in these ways you are monkeying with something really dangerous.

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(Signed)

The Protection of Firearms Against Corrosion

By

Wilbert J. Huff

Research Chemist, The Mellon Institute

Pittsburg, Pa.

* * * * *

The writer, while a member of the research staff of the United States Bureau of Mines, was assigned the general problem of corrosion under oil films, with special reference to the after-corrosion of firearms. The results have been published in various media, one of which is Technical Paper 188, Department of the Interior, Bureau of Mines, "Corrosion under oil films, with special reference to the cause and prevention of the after-corrosion of firearms," by Wilbert J. Huff, and have been the subject of rather widespread comment.

It is probable, however, that many riflemen have never seen these publications, since they were written primarily for the readers of science. However, the findings relate to matters of fundamental importance to every user of firearms, so it appears advisable to present here some of the important conclusions obtained.

The violent corrosion which often attacks the bores of firearms, even after these have been carefully cleaned and oiled, has been attributed to a great many different possible causes, such as: smokeless powder residues, the occlusion of acid gases during firing, metal fouling, acid primer deposits, or primer salts. In accord with such various conflicting theories a large number of cleaning processes have been proposed and a number of nitro-solvents, gun oils, gun pastes, gun greases and other cleaning agents have been placed upon the market. Some authorities have recommended such drastic agents as aqua ammonia, or concentrated sodium carbonate solutions.

The investigation dealt with all of these matters thoroughly, and definitely established the causes and the remedies for after-corrosion. It is unnecessary to repeat here a description of the experiments performed, or to develop the process of scientific reasoning by which the problems involved were solved. The reader interested in such matters can refer to the publications previously mentioned. Suffice to state that the chief cause of this violent corrosion was shown to be a salt, potassium chloride, deposited in the bore of the piece by the explosion of the primer.

This salt is not acid, and does not attack the metal of the bore. However, it does deliquesce—that is, attracts water when exposed to high atmospheric humidities. The salt remains lodged in the pits and tool wounds of the bore even after the piece is carefully swabbed, and draws the water even through a layer of oil or grease. This water thus comes into intimate contact with the metal of the bore, and corrosion follows after the lapse of only a short time.

The proper remedy requires the removal of the potassium chloride. This can only be accomplished by dissolving it. For such a purpose aqua ammonia or the sodium carbonate solution may be used. However, the chemicals are not necessary, and indeed serve no useful purpose here. If improperly applied, or introduced into the mechanism, they may do considerable harm. The potassium chloride is readily dissolved by water, and water alone may be used, provided it is at once swabbed out and the piece thoroughly dried. The writer was the first, so far as he is aware, to advocate the use of a water cleaning process. A great many riflemen have since adopted this, and in the hands of careful workers it has proven very successful and has received many favorable comments.

However, there is a deep seated prejudice against the use of water in cleaning. Many fear that it will be introduced by accident into the breech mechanism, from which it can be removed only with difficulty, or in which it may remain unnoticed to cause corrosion. In many rifles it is difficult to dismount the barrel or to so prepare the piece that water may be used safely. For such reasons there exists a real need for a suitable solvent, which will dissolve the chloride, and which will not corrode or attack the piece if it is allowed to remain in the piece for some time.

To determine whether or not such a solvent or gun oil could be purchased, the writer obtained a number of widely advertised preparations used here and abroad. These were analyzed in the laboratories of the Bureau of Mines and submitted to firing tests by the writer. None filled the need.

The number of failures in the corrosion tests is striking. Many of the mixtures are not only inadequate but, because of the false sense of security that their use may induce, are even dangerous.

It is clear, therefore, that not one of the commercial preparations now on the market can be considered satisfactory. The cause is at once apparent to the chemist. Not one contains a solvent for the potassium chloride, consequently this salt remains to cause corrosion.

For this reason the writer has previously advocated the water cleaning process. Recently, however, when the disadvantages of the water process were brought forward, it seemed advisable to develop an entirely new type of cleaning material, which would readily dissolve the chloride, and which might be left in contact with any of the metal parts of the piece for a considerable time without causing any harmful effects. Such a cleaning material was devised by the writer. When swabbed out, it leaves upon the bore surface an oily coating which, readily blends with the oil or grease subsequently applied. Because of these properties—that of dissolving the potassium chloride and of blending with oil—it has been named "Chloroil."

Chloroil has been carefully tested in all manner of small firearms and machine guns by a number of independent investigators. In every case it has prevented after-corrosion without harming the piece. It is not yet commercially available, but will be placed upon the market in the near future by the

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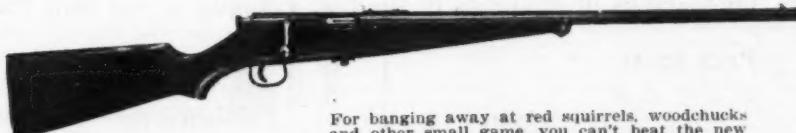
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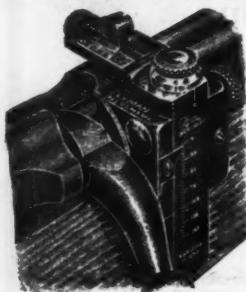
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FOR SALE—Weiss Alpine Stereo Binocular, made for Signal Corps, 7 X, independently focusing eyepieces, enamel horn, russet leather case, \$15.00. No. 0 Graphic Camera 1½ x 2½, Zeiss 6.5, Focal Plane Shutter, speed 1-500 second, leather case, good condition, \$35.00. C. M. Coble, 1501 Park Ave., Omaha, Neb.

FOR SALE—.30-40 Winchester 95, 25-inch Lyman rear. Marble's gold front, fine condition, \$37.00. Sterling grade Baker, 1½ x 1½ x 14½, fine, \$65.00. 6 mm. Lee straight pull, \$16.00. Might trade for good shotgun. Fred Johnson, Seneca, Ill.

FOR SALE—.58 Civil War muzzle-loading rifle, fair, \$4.50. .577 Enfield muzzle-loading carbine, with mould, bore fine, \$6.50. .577 Snider-Enfield, altered to carbine, good, \$6.50. .50-70 Springfield rifle, good, \$5.00. .50-70 Springfield Carbine, fair, \$4.00. .50-70 Remington Navy rifle, fair, \$4.00. .50-70 Remington N. Y. State model Carbine, good, \$4.50. .50 Remington Navy pistol, with 40 rounds of reloadable ammunition, fair, \$12.00. .32-44 Smith & Wesson revolver, 16-inch barrel, fair, \$25.00. .32 rim-fire Hopkins & Allen revolver, single action, 2½-inch barrel, pearl grips, fair, \$3.50. .22 H. & R. "Young America" revolver, 6-inch barrel, good, \$6.00. .45 Colt reloading tool, ideal, with mould, 150 cases and resizing die, \$6.50. Ideal mould, 456192, 350 gr., \$2.00. Ideal mould "Goulds Express," hollowpoint, 456122, 330 gr., \$2.00. Krag 3 ball mould, round, \$1.00. .45-70 shell resizing die, \$1.00. Collection of about 100 ancient and modern cartridges \$5.00. B. K. Wingate, 448 Birkle Ave., Bethlehem, Pa.

FOR SALE—Parker 12-gauge, double G. H. field model, 28-inch Damascus steel, recoil pad. In good condition outside, like new inside. Sell for \$45.00 or trade for portable typewriter in good condition. H. E. Priess, 5341 Murdock Ave., St. Louis, Missouri.

FOR SALE—Lyman 103, dovetailed for Springfield or Krag bolt. Large disk. Spare windage screw and drum. Scarcely used. Bluing perfect. \$6.00 p. p. X. M. S., 816 South Windsor Blvd., Los Angeles, Cal.

FOR SALE—One Bond No. 9-c Scale, complete with weights, new condition, \$5.00. Harry H. Grulke, Lewis, Iowa.

FOR SALE—Side Scope, 8 power; Sharpard Borchardt, Springfield, Parker 20-power spotting scope and stand; all in perfect condition. Details by letter. Robert Storer, 210 Park St., West Roxbury 32, Mass.

FOR SALE—Model 14-D Peerless Grade .32 Remington rifle, Lyman rear and ivory bead front sights. Perfect condition. Price, \$80.00. F. H. Bentley, 225 W. Fourth St., Williamsport, Pa.

WOULD LIKE TO BUY a fine Springfield Sporter, or would prefer to trade a very fine positively prewar 7 mm. Waffenfabrik Mauser Obendorf A-N Sporter with Goerz 4½ x Scope. This rifle purchased from Van Lengerke & Detmold and is A-1 guaranteed. Will sell outfit for \$35.00. Would also like to swap a new Model 52 Winchester for a new .250-3,000 bolt action Savage. Fred N. Anderson, 174 Lafayette Ave., Suffern, N. Y.

SPORTING STOCKS for Springfield, Krag, and other bolt rifles. Hand-made to your specifications of best American, Italian, and Circassian walnut, finished and unfinished. Any measurements. Unfinished stocks all shaped up, full pistol grip, barrel and action let in, beautifully checkered, steel grip cap and steel butt plate, ready for polishing and oiling, \$18.00. Same finished complete, \$25.00. Same done in stump wood or foreign wood, from \$35.00 to \$50.00. Detachable ring with swivels, \$3.00. Barrel ring and screw, anyone can put them on, \$2.00. Steel butt plates and recoil pads at lowest price. Hand forged checkering tools, \$1.50. All above goods sold under a positive guarantee to please you, or money back on return of goods. No strings on this guarantee. Send stamps for photos of stocks. R. D. Tait, Montague, Calif.

FOR SALE—One .30-'06 Niedner Free Rifle. Outfit has a heavy 30-inch Niedner barrel, Globe front sight, Lyman 48 rear, with special graduations for the 300 meter course, 1922 Model stock, with Swiss butt plate, double set trigger and adjustable palm rest. This outfit is new and very accurate. \$125.00. Lawrence Nuesslein, 1117 14th St., N. W., Wash., D. C.

BARGAINS in smokeless ammunition .38 Long for Colt and S. & W. Specials, \$1.95; .45 Auto. \$2.50 per 100. Expanding bullet cartridges (standard loads), .30-'06, \$5.95. Krag, Russian and .303 British sizes, \$5.25. Lot 150 smokeless .45-70, \$5.50. Lot 3,000 .22 Long Rifle, \$9.00. O'Grady, Sisseton, South Dakota.

FOR SALE—S. & W. .35 cal. Automatic, new, two magazines, \$20.00. L. N. Wagner, 249 Custer Ave., Youngstown, Ohio.

FOR SALE—Gentleman's beaver fur coat, containing fourteen hides, size 44, new. Price, \$400, or will send C. O. D. C. V. Carmichael, Monitor, Oregon.

FOR SALE—1903 Springfield, cal. .30-06, \$28; .38 Colt Automatic, Military Model, brand new, 100 cartridges, \$35.00; Model 25 Remington .25-20, brand new, Lyman peep with cup disc, Marble's folding leaf, Ideal reloading tool, \$30; brand new Remington 12 C, Lyman peep with cup disc, 5-B front sight, \$24; Model 52 Winchester, perfect, \$35; Colt .22 P. P. Target, new barrel, perfect, \$20; New Kerr web slings 50 cents each; .25-20 Winchester tool and mould, \$4. W. M. Gant, Box 54, Elmore, Alabama.

FOR SALE OR TRADE—Wheeling 3-bore gun, 12-32-40 checkered stock and fore end, 16-inch barrel, 270, 1312 Win. 12 ga. Model, \$48. Both in A-1 condition. Want .30-30, .30-40, or 20 ga. Remington of equal value. Lawrence E. Gates, Emleton, Penna.

FOR SALE—Model 52 Winchester, perfect factory condition, never fired. Original grease still in barrel. First money order for \$10.00 takes it. C. S. Pool, Drawer "T," Taft, Calif.

FOR SALE—Colt .44-40 S. A. 7½. Ideal tool and 50 loaded cartridges, like new, \$25 or trade for Colt's New Service or New Service Target. F. E. Cody, 304 West Main St., Ottawa, Illinois.

WILL TRADE cash for .30 cal., super-accurate, star-gauged Sporting Springfield, with Lyman No. 48 and bead. Must be perfect with privilege of examination. Give full particulars first letter. C. F. Johnson, Delhi, Minn.

FOR SALE—Colt .45 Automatic, fine condition, with holster, \$15. W. J. Winter, 323 So. 6th St., Goshen, Ind.

FOR SALE—Model 30, Remington Bolt Action rifle, cal. .30-06 Government sling, ivory sight, like new, shot only 25 times, perfect. 100 cartridges. First money order \$50 or C. O. D. subject to inspection. Robert L. Bruning, 841 Ross Ave., Hamilton, Ohio.

FOR SALE—Winchester .25-35, fine \$20; 2 Winchester 5-A Scopes No. mounts, brand new, \$24 each; Parker 12 ga., 2 Match Springfield, Krag Carbine, all nearly new, priced to sell. WANT repeating shotgun, 48 Lyman scales, repeating scope, tools. J. E. Brownlee, Lamar, Colorado.

TRADE—1 C. S. Complete Steam Engineering, never used, for .30-06 Springfield. New web slings, 60 cents each, postpaid. D. C. McNeill, 33 Beckford St., Beverly, Mass.

WANTED—Loaded or empty shells for the 7.62 Russian Nagant rifle. FOR SALE—250-3,000 Savage lever action, prewar with extra quality stock and No. 45 Side telescope, has been fired about 300 times and is in gun crank condition inside and out. H. A. Lowe, 1874 E. 66th St., Cleveland, Ohio.

COLLECTION old U. S. coins, about 300 pieces, some prior to 1800, for guns or cash. Earl J. Russell, Monmouth, Illinois.

FOR SALE—.32-20 Winchester 1892 Rifle, Lyman sights, \$20.00. .45 S. & W. 1917 Revolver, \$28.00. .22 Colt Automatic and holster \$25.00. All new. .25 Stevens Pistol, fair, \$6.00. A. V. Bissell, Terryville, Connecticut.

TODD PROTECTOGRAPH CHECK WRITER, excellent condition, \$45.00, or will trade for guns or shooting equipment. Prefer .22 Springfield Model 1922; .30 National Match Springfield; 8 x 30 Zeiss prismatic binocular or monocular. J. E. Berns, U. S. Torpedo Station, Keyport, Washington.

RIFLE RESTOCKING AND REBUING—We rebuild your military rifle in a sporting model and make it shoot as straight as your barrel is good. All rifles given target and working tests before shipment. W. R. McCay & Son, 829 Morton St., New Castle, Pa.

FOR SALE—Winchester-Remington & U. S. Black Powder: .44-40 Win. \$1.75 per 100—\$15.00 per 1,000. .38-40 Win. \$1.75 per 100—\$15.00 per 1,000. .41 Long Colt \$1.65 per 100—\$13.50 per 1,000. .38 Long Colt \$1.65 per 100—\$13.50 per 1,000. .38 New Police \$1.65 per 100—\$12.00 per 1,000. In perfect condition, all packed in original sealed boxes. A. L. Steltz, Warehouse Point, Conn.

FOR SALE—.250 Savage, featherweight, 1899, Mills belt, 20 cartridges, Lyman peep. Perfect \$40.00. Walter J. Mackey, R. F. D. No. 1, West Baldwin, Maine.

SPRINGFIELD SET TRIGGERS

Double Set Triggers fitted to your Springfield trigger guard, complete with Sear knock-off and Sear spring, \$15.00.

L. NUSSLIN,
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GIVE YOUR CHILD A FIGHTING CHANCE in these days of STRENUOUS competition. A Good Penman is given preference for all positions. Dr. Bevis' Aluminum System of Tracing-Pennmanship-INSURES EXACT FORM OF LETTERS, CORRECT MOTION FORM OF LETTERS, CORRECT MOTION and TIME. The child cannot do it wrong. He MUST WRITE RIGHT. Complete set \$1.00; 3 sets \$2.25. Nat'l Educators Asso. Colo. Branch, 1115 N. Custer St., Colorado Springs, Colo.

HUNTING CABINS for sale or rent. Ideally located for deer, bear, mountain lion, wolf, trapping, on trout stream, etc., limited. Address Box 666, Libby, Montana.

FOR SALE—One .22 Colt Automatic, holster and two clips. In perfect condition, shot 300 times. First money order for \$30.00 takes it. Dr. Earl J. Thee, 245½ Western Ave., Los Angeles, Cal.

WANTED—Mannlicher-Schoenauer 6.5 mm., 18 in. bbl., in gun crank condition. Pre-war manufacture. Describe fully and state price asked. J. M. Perley, 313 Maple Ave., Oak Park, Ill.

FOR SALE—Stevens Schuetzen, .32-40 half octagon barrel, 24-inch, double set triggers, checked fore-end and grip, interchangeable disc front sight, Vernier peep windage rear sight, palm rest, bullet mould and bullet seater, perfect condition inside and nearly so outside. \$25.00. Remington .44 cal. Russian Model pistol, 10-inch barrel, Partridge sights, checked trigger. Barrel has slight swell about 2 inches from breach but does not impair accuracy, bullet mould and about 200 cartridges. \$30.00. Fire it 50 shots and if it is not the most accurate pistol you ever shot send it back. Blyley Colt .32-20, perfect inside, bluing slightly worn outside. Partridge sights which can be removed leaving the regular sporting sights, checked trigger and back strap, a beautiful arm \$35.00, or will trade for .38 cal. Officers' Model in like condition. Dr. C. Edward Sayre, 313 No. 11th St., Norfolk, Nebraska.

FOR SALE—.30 '06 Springfield with Lyman No. 48, King comb, folding leaf, ivory bead front sights, sole leather case, Ideal No. 10 reloading tool, S S S sub-chamber, 200 primed shells, 10 soft nose, 25 short range, 55 metal cased cartridges and belt. All in good condition. \$55.00 cash, 12-gauge Belgium hammer gun, fair, \$12.00. J. H. Bachmann, Box 357, Crawford, Nebraska.

TRADE—.32 cal. Colt Auto., condition good, for Colt S. A. cal. .45, bbl. 4½ or 5½, good condition. Dr. J. A. Kimball, 354 Broadway, Idaho Falls, Idaho.

TO EXCHANGE—Colt .32 Auto., fine, has new barrel, never fired, for Blyley model in .32 or .38, must be good. Also .38-44 S. & W. target, gun crank condition, for Weiss or Bausch & Lomb binoculars, six or seven power, write a bargain here. Chase Cole, Route 1, Canon City, Colorado.

FOR SALE—New Remington Model No. 24, Auto., .22 L. R. in original package \$25.00; Springfield '22, guaranteed perfect, just bought at Camp Perry. Only fired one box cartridges, with extras \$40.00. Winchester 5-A Scope, like new, No. 2 mounts, special fine spider web cross hairs, \$25.00. Will exchange some N. M. '23 ammunition for Bond loading tools, powder measure, or lubricator, or sell. D. A. Schmitz, 11200 Ada Ave., Cleveland, Ohio.

WANTED—S. & W. Russian model target revolver 38-44 or 22-44 cal. in perfect condition for cash, or will trade 38 S. & W. spl. 4-inch new and pay difference. M. Jarrett, 316 Grove St., Williamsport, Pa.

NEW ARMY GOODS FOR SALE—Haversack with pack carriers, complete, 75 cents; Web pistol belts, 75 cents; Entrenching shovels with carriers, \$1.00; Army axes with carriers, 75 cents; Medical dressing cases (Ambulance Box), \$6.00; Army web belts for .30-06 cartridges, capacity 100, 75 cents; Reclaimed Government Kit Bags, 75 cents; Reclaimed Government Ammunition Boxes, \$1.00. Also a full line of hunting and camping equipment. No catalogue. Service Equipment Co., 16 Jefferson Ave., Maspeth, N. Y.

FOR SALE—Westley Richards .318 takedown Mauser, 26-inch barrel, open sights, excellent condition. Price, \$140.00. Major T. D. Sloan, Fort Bragg, North Carolina.

FOR SALE—Malcolm Rifle 'Scope, 4 or 5 power, \$10.00. Vion 40-power spotting scope, \$20.00. B. S. A. Hooded Post and Aperture front sight and extra apertures, \$15.00. Three different sized apertures for Winchester globe and peep front sight, special actory make, cost \$1.50 each. Price, \$1.00, or three for \$2.50.

TRADE—Winchester 1886, Model .40-65 cal. in new condition, with 25 cartridges and loading tools for Krag sporter, in like condition. One Mould No. 308329 to trade for Ideal Mould No. 308241 or Bond Mould No. A-311870.

FOR SALE—Springfield Sporter, star-gauged, good condition, handsome hand-made stock, Lyman 48 rear sight. Canvas and leather case, spare parts, \$65.00. Krag carbine, No. 103 Lyman rear sight. Original stock reworked, pistol grip and checked, \$35.00. S. & W. Special 44 6-inch barrel, practically new, good leather flap holster and belt, target sights, \$35.00. H. A. Moser, 490 E. 9th St., N., Portland, Oregon.

I WILL PAY Fifteen Dollars for Springfield Rifle, Model '03. Condition of bore and minor parts not important. Write me description of gun. Nathaniel C. Nash, Jr., 853 Exchange Bldg., Boston, 9, Massachusetts.

FOR SALE—.303 Savage, Model '99, 22-inch barrel, checkered fore-end and grip. Lyman peep rear and sheared gold bead front sights, in perfect condition, \$35.00. Also '90 Model Winchester for .22 W. R. F. cartridge, new barrel, Marble peep rear sight, \$15.00. George Senior, 1½ Palm St., Providence, Rhode Island.

FOR SALE—Model 1917 S. & W. .45 Revolver with shoulder holster and 150 cartridges, \$30.00. Gun has never been fired. Alec W. Gordon, Ambassador Hotel, St. Louis, Mo.

SOME PARTS for Colt's Single Action Army for sale, brand new hammer and trigger. One ½-inch barrel, one 7½. F. C. Ness, Red Wing, Minnesota.

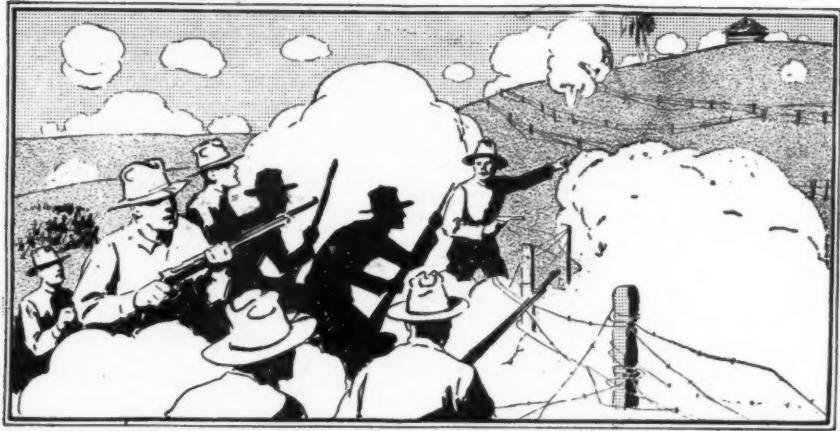
WANTED—.30-40 Winchester Single Shot Rife, solid frame, 30-inch No. 3 round barrel Schuetzen double set trigger, shotgun butt plate. 44-40 Single Action Frontier Colt 5½-inch barrel. Factory number less than 50,000. Both must be in perfect condition. R. K. Valentine, Conklin, New York.

FOR SALE OR EXCHANGE—.20 ga. C grade LeFever double 28 in., right modified and left full auto ejector, single trigger, beautifully engraved and in perfect condition, \$100. 6.5 Mannlicher Schoenauer, new, never fired with scope, scabbard and scope case by Heisler, reloading tools for Bond handles, 20 Western cartridges, about 40 new cases and about 80 new bullets Western lubaloy. Outfit cost over \$200. Will exchange for Springfield pressure barrel, outfit of like value, or high grade 7 mm. Mauser chambered for 129-grain bullet, or high grade Springfield Neidner .25 cal., or sell for \$100. Krag carbine, new barrel (about one hundred lubaloy bullets fired in it) Lyman No. 48 rear, high Lyman front semi-sporter stock, 500 Remington 17 cartridges, for \$30, or exchange for new condition Colt officer's model or S. & W. Military .38 special or Match Springfield (receiver number over million). Will give difference if condition of Springfield justifies. Old high grade 16 ga. Parker stock fair, action good, need new barrel, \$10. Dunlap Roddey Rock Hill, South Carolina.

FOR SALE OR TRADE—Pre-war Genuine Waffenfabrik Mauser Oberndorf a/n Modell 1898. Checked half pistol grip Sporting stock. 8 mm., 24-inch barrel. Gold bead front sight, 500 meter adjustable rear sight. Quick detachable H. Loupe telescope. Mounts do not interfere with open sight. Double set trigger. Sliding swivels. Fine condition. \$65.00 or equal value shotgun or '03 Springfield. F. H. Deyette, 2 Frederick St., Worcester, Mass.







With the Rough-Riders at San Juan

WHEN Roosevelt and his Rough-Riders stormed the defenses at "Kettle Hill", service to the government had been a recognized duty of the du Pont Company for over a century.

In 1802, practically all du Pont powder was made for army and navy. Today less than 2% is used for military purposes and over 98% for the uses of industry.

Du Pont Explosives have played an important part in the battles and the agricultural and industrial development of the nation since 1802.

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DU PONT



INTERNATIONAL PISTOL TEAM MATCH - - - 1923

RESULTS

Nation: U.S.A.

No.	NAME OF SHOOTER	SERIES										TOTAL
		1	2	3	4	5	6	7	8	9	10	
1	D.R.Calkins - Springfield	87	88	89	87	83	89					523
2	C.A.Purie	"	90	82	82	86	86	84				513
3	J.J.Dunn	"	89	76	83	91	77	77				487
4	R.Wescott	"	81	89	86	83	88	87				512
5	K.T.Fredrick	"	75	79	82	88	94	87				505
ARMS S+W 10" SS PISTOL		TOTAL OF THE NATION:										2540
ARM US NRA												

Three More Championships with US Ammunition

In winning the International Pistol Championship Matches at Camp Perry, the United States Pistol Team scored 2540 as shown by the score reproduced above. The entire United States team shot US .22 N. R. A. cartridges, adding another championship to the long list of wins which has established these sure-shooting .22's as the first choice of expert marksmen.

Dr. I. R. Calkins of the Springfield Revolver Club, the member of the United States Team who won the Individual Pistol Championship of the World, scored 523, as shown by the composite target reproduced above. His score is nine points more than last year's record score.

US .22 N. R. A.'s also played a leading part in the winning of the All-Around Championship. This event was won by Gunnery Sergeant J. M. Thomas, U. S. Marines, who used US .22 N. R. A. long rifle cartridges in every match where .22's were allowed. Sergeant Thomas also used US Trap Shells with Cork-Tex wads in the trap-shooting tournament.

On the range or in the field shoot US ammunition. Whether you use US shells or US cartridges, you will find US Ammunition the last word in accuracy and uniformity.

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Have you tried the hollow-point .22 N. R. A.? It is in a class by itself for small game.

